

Green Purchasing Training Overview

July 24, 2008

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helping grow the world's
most sustainable companies



Green is Suddenly Everywhere



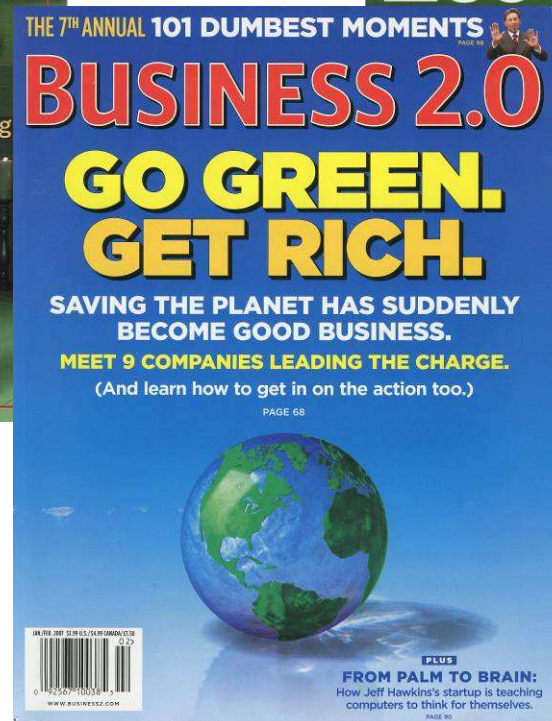
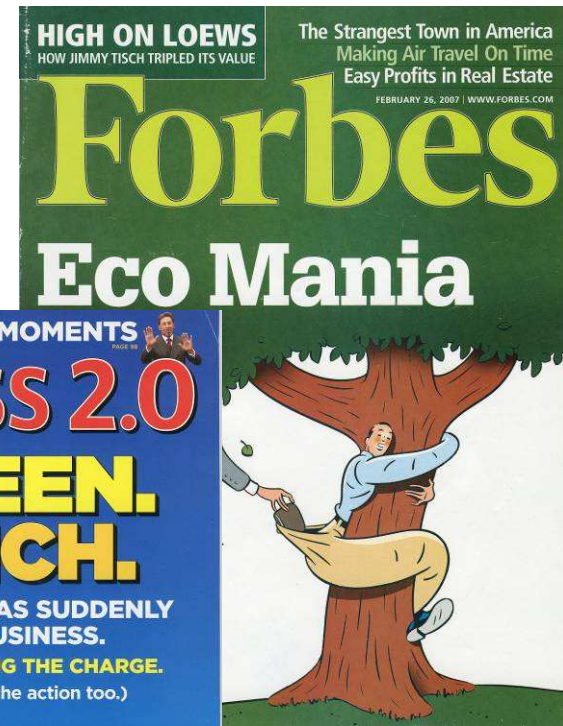


It's Everywhere...





It's Everywhere...



...Even Soap Opera Digest

Style soap opera **Days goes Green for Lumi's wedding**

GL Wedding Belles

Compiled by Gabrielle Winkel

Sam and Lucas
(Allison Sweeney and Bryan R. Dettilio)
Sam's silk gown is by Monique Lhuillier (moniquehuillier.com).
"I've had Bryan's (Dettie, Lucas) tuxedo for probably 10 years," says the show's costume designer, Richard Bloore.

Stephanie
(Shelley Hennig)
"Stephanie is a lot more sexually aware and body-conscious," Bloore explains, "so she's more free-spirited. She's wearing silk chiffon print dress by Milly."

Chelsea
(Rachel Melvin)
"Chelsea wears a strapless 100 per cent silk/satin dress by Rose & Lala. It's in pink to match the wedding flowers."

Maggie
(Suzanne Rogers)
"She's wearing a brocade yellow Carmen Marc Valvo suit. It's got some sequined detailing."

Billie
(Julia Pinson)
"Billie wears a dress by Nicole Miller. It's an iridescent silk organza, which has more body than a chiffon."

Olivia is the "something blue" at her own wedding this week on *Guiding Light* when Buzz confronts her about kissing Jeffrey, but the bride still dazzles, thanks to costume designer Shawn Dudley. Olivia wears an Impression by Zoro dress that GL purchased at RK Bridal (RKBRidal.com). Ava plays maid of honor in a gown from 3.1 Phillip Lim. "Both dresses were modern and simple styles. Crystal loved the dress at first sight," boasts Dudley. See page 6 for more.

Caroline and Shawn
(Peggy McCay and Frank Parker)
Caroline is wearing a three-piece outfit — tea-length skirt, a cami and a short jacket — by Eileen Fisher.

Kate (Lauren Koslow)
"Her dress is by Mandalay Bay, and the gold jacket is Carmen Marc Valvo."

Hair and makeup did it, too. *Days* hairstylist Margie Puga recently did over 800 (fifteen Organ Products). "They just can out with a lighter line; it's organic and it smells great. Another back All's hair, MOP cream and put it in ponytail, then I did a very loose braid. I placed real, blush-colored roses in the braid." Puga also loves Schwarzkopf products. "I are eco-friendly because their containers are reused and recyclable."

"We use a lot of MAC's kits. They don't leak on a table and all of their packaging is recyclable," explains makeup artist Gail Hopkins.

"Those are key things in terms of the environment. We use one Alcon makeup sponges. They are biodegradable and washable, so you can use them more than once. That's a huge factor because we go through so many sponges every day for each person."

For Schwarzkopf Professional Products call 800-787-0997. For MOP products, visit mopproducts.com, and for Alcon Professional Makeup sponges, visitalcon.com.

28 SOAP OPERA WEEKLY



Environmental Purchasing Policies

States:

California
Connecticut
Georgia
Illinois
Indiana
Iowa
Massachusetts
Missouri
Minnesota
New Jersey
North Carolina
Oregon
Pennsylvania
Vermont
Washington

Counties:

Chatham County, NC
Kalamazoo County, WI
King County, WA
Kitsap County, WA
Multnomah County, OR
San Mateo County, CA
Santa Cruz County, CA
Sarasota County, FL

Cities:

Boulder, CO
Cincinnati, OH
Kansas City, MO
Portland, OR
Phoenix, AZ
San Francisco, CA
Santa Monica, CA
Seattle, WA

More than 80 policies are available at:

www.newdream.org/procure

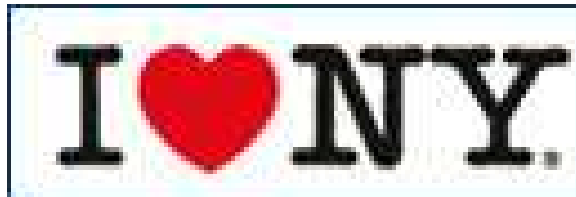


Welcome New York!!

New York Governor David A. Paterson recently signed:

Executive Order No 4: *Establishing a State Green Procurement and Agency Sustainability Program*

April 24, 2008



[www.ny.gov/governor/executive_orders/
exeorders/eo_4_print.html](http://www.ny.gov/governor/executive_orders/exeorders/eo_4_print.html)





New York Executive Order

- Establishes an Interagency Committee on Sustainability and Green Procurement
- Requires the Committee to identify three priority categories and categories and lists and the categories include commodities, services and technology
- Requires 100% post-consumer, process chlorine free copy and janitorial papers.
- Includes several specific deadlines.



New York EO (cont.)

- Creates a Governor-appointed, 11-member Sustainability and Green Procurement Advisory Council.
- Requires every agency to have a sustainability and green procurement coordinator.
- Mandates Office of General Services to identify a Director of Green Procurement
- Requires an annual green purchasing and sustainability report.



Welcome Portland, OR!!

July 16, 2008 – Portland Sustainable Procurement Policy

- Identifies environmental, social, and financial considerations
- Encourages use of best practices
- Embraces precautionary principle
- Promotes use of third-party standards
- Identifies roles and responsibilities
- Requires education and training
- Mandates data collection and reporting
- Reexamines the policy every 5 years





Welcome Montana

????



Welcome Montana

- 20 x 10 Initiative on energy efficiency
- 30 MPG initiative
- Green products available through state stores
- This training to encourage you to do even more





Environmental Concerns

- Mass extinctions
- Deforestation & soil erosion
- Air & water pollution
- “Super” bacteria, viruses, and insects
- Dwindling natural resources
- Cancer rates increasing
- Reproductive disorders increasing
- Fisheries collapsing
- Water tables falling
- Climate Change



Extinctions

- 51% of freshwater animal species are declining in number.
- One in four vertebrate species are in sharp decline or facing serious pressure from human activities.
- One of every eight known plant species is threatened with extinction or is nearly extinct.
- One in ten tree species—some 8,750 of the 80,000 to 100,000 tree species known to science—are threatened with extinction.
- The overall rate of extinction is estimated to be 1,000 to 10,000 times higher than it would be naturally.

Link Between Purchasing and the Environment

It's All Connected to Purchasing

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Consuming the Environment

"The major cause of the continued deterioration of the global environment is the unsustainable pattern of production and consumption, particularly in industrialized countries."

– United Nations Agenda 21 Report



2002 World Summit

Emphasized the need for authorities to “[p]romote public procurement policies that encourage development and diffusion of environmentally sound goods and services.”

- 2002 World Summit on Sustainable Development in Johannesburg



Big Business Responds

“We are looking at innovative ways to reduce our greenhouse gas emissions. This used to be controversial, but the science is in and it is overwhelming.... We believe every company has a responsibility to reduce greenhouse gases as quickly as it can.”

—Lee Scott, CEO of Wal-Mart
October 24, 2005



Wal-Mart's Goals



To be supplied 100% by renewable energy

- Existing stores 20% more efficient in 7 years
- New stores 30% more efficient in 4 years
- Fleet 25% more efficient in 3 years, double in 10 years



To create zero waste

- 25% reduction in solid waste in 3 years
- All private brand packaging improved in 2 years (right sized, reusable materials)



To sell products that sustain our resources & environment

- 20% supply base aligned in 3 years
- Preference given to aligned suppliers in 2 years
- Design and support Green Company in China



EcoLogo[™]

Private Sector Companies



VOLVO



INTERFACE



AVEDA[™]
the art and science of pure flower and plant essences

patagonia[®]





More Private Sector Companies



Canon

DAIMLERCHRYSLER



PSEG

NEC



STAPLES



SONY



The Collins Companies



Sun
microsystems

Norm Thompson

Herman Miller



Impact of U.S. Purchasing

The United States contains less than **5 percent** of the world's **population**, but consumes more than **40 percent** of the world's resources.



Impact of U.S. Purchasing

Americans throw away about **4 pounds** of garbage each day, but use **120 pounds** every day in natural resources extracted from farms, forests, range lands, and mines.



Ecological Footprint

- Average U.S. citizen has a footprint of 31 acres.
- Average Indian citizen has a footprint of 2 acres.
- World average is 7.1 acres.
- Available world average is 5.3 acres.



Ecological Footprint

If everyone lived like the average American, we would need at least five more planets.



Ecological Footprint

If current material and population growth trends continue and population stabilizes at 10 billion people in 2040, we will need between eight and twelve additional planets.



Two Cups of Coffee a Day

- 34 gallons of coffee a year.
- 18 pounds of coffee beans
- 12 pounds of fertilizer
- A few ounces of highly toxic pesticides
- 43 pounds of coffee pulp
- Clear cutting of forests to grow even more coffee
- Bird species disappearing
- More erosion
- More pesticides



Energy Consumption

- Every gallon of gas burned emits 19 pounds of carbon dioxide.
- Every day, the worldwide economy burns an amount of energy the planet required 10,000 days to create.



Resource Consumption

- One ton of virgin paper requires 98 tons of resources to produce.
- A single 1/10 ounce, 14-carat gold ring requires 2.8 tons of ore



Typical Desktop Computer

- Manufacturing a typical desktop computer creates 139-pounds of waste and 49 pounds of hazardous materials.
- Producing the six-inch silicon wafer from which computer chips are cut generates 2,840 gallons of wastewater and 7 pounds of hazardous waste.



Lifecycle Considerations



Lifecycle Considerations



Lifecycle Considerations





Reducing Impacts

- When recycled materials are used to produce paper, aluminum, and glass, energy consumption can be reduced by up to 95%, water consumption by up to 50%, air pollution by 95%, and water pollution by up to 97%.
- When scrap iron is used instead of iron ore to make steel, mining wastes are reduced by 97%, air pollution effluents by 80%, and water pollution by 76%.

Inspiration

"Unless someone like you
cares a whole awful lot,
nothing is going to get
better. It's not."

— *Dr. Seuss, from The Lorax*



Defining Responsible Purchasing

helping grow the world's
most sustainable companies



Definition Components

- Reduce the environmental impacts of purchasing decisions.
- Emphasize multiple environmental attributes.
- Examine entire lifecycle.



Boulder, Colorado

“a material or product [that] is durable, repairable, reusable, or recyclable; has a minimum of packaging, toxic content, or chemical hazard potential; is resource or energy efficient in any or all phases of its manufacture, use, and disposal; or in its use or disposal minimizes or eliminates the [c]ity’s potential environmental liability.”

- Environmental Purchasing Directive



Pennsylvania

“procurement of environmentally friendly commodities and services [that] avoid the use of toxics, minimize use of virgin materials and energy in their production, have a long useful life, and can be recycled afterwards.”

- Executive Order



Seattle, Washington

"environmental factors to be considered in selecting products include [a] life cycle analysis of:

- pollutant releases;
- waste generation;
- recycled content;
- energy consumption;
- depletion of natural resources; and
- potential impact on human health and the environment."

-- Purchasing Policy



Federal Government Definition

Environmentally preferable products are “products and services [that] have a lesser or reduced effect on human health and the environment when compared to other products and services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or service.”

- Executive Order 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*, September 16, 1998



Environmental Attributes

- Product-specific attributes
- Process-specific attributes
- Manufacturer-specific attributes
- Life cycle perspective



Product Specific Attributes

- Biobased
- Biodegradable
- Carcinogen-free
- Chlorofluorocarbon (CFC)-free
- Compostable
- Durable
- Energy efficiency
- Lead-free
- Less hazardous
- Locally manufactured
- Low volatile organic compound (VOC) content
- Low-toxicity
- Mercury-free
- Persistent bioaccumulative toxin (PBT)-free
- (Rapidly) renewable materials
- Recyclable
- Recycled content
- Reduced greenhouse gas emissions
- Reduced packaging
- Refurbished
- Resource efficiency
- Upgradeable
- Water efficiency



Process-Specific Attributes

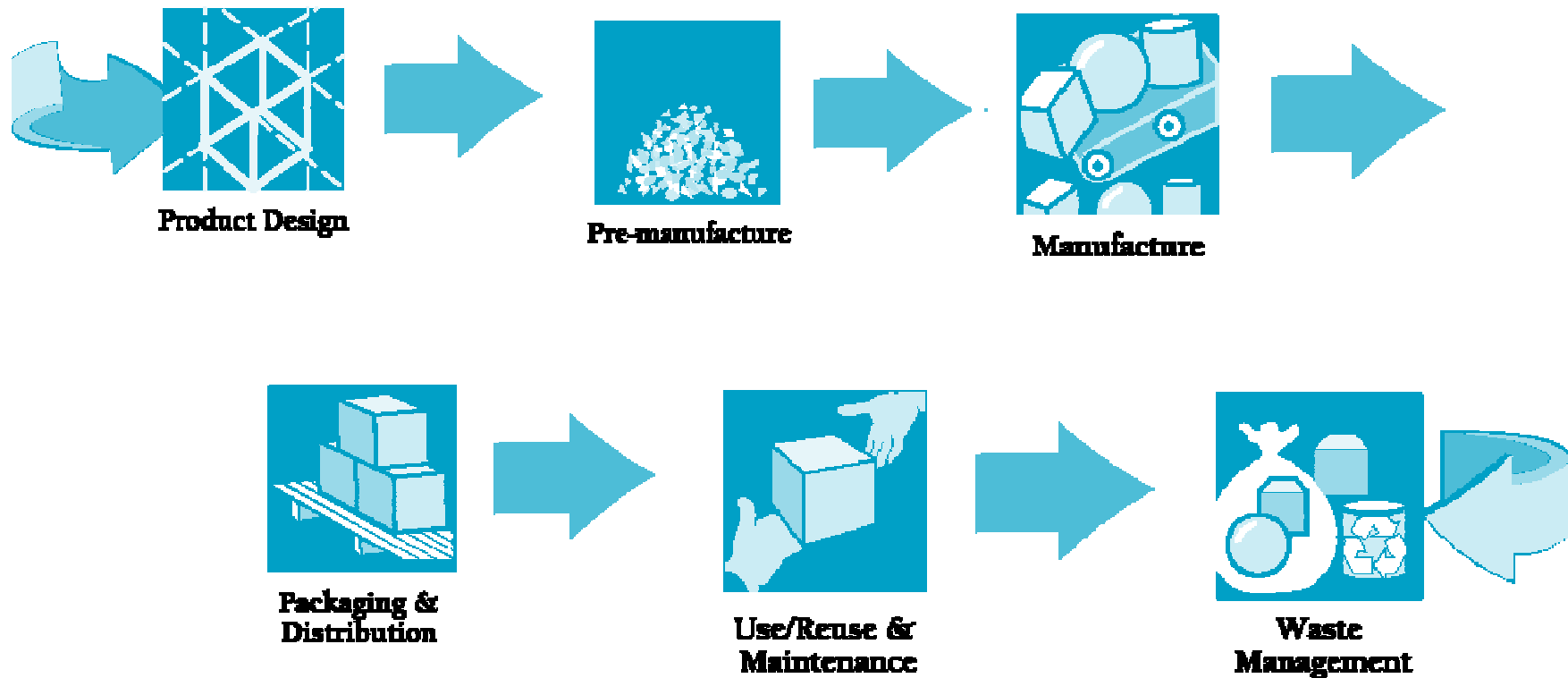
- Transportation
- Use of renewable energy
- Absence of hazardous byproducts
- Greenhouse gas emissions
- Closed-loop manufacturing facility
- Others



Manufacturer-Specific Attributes

- Lack of environmental violations
- Credible Environmental Management System
- Public environmental/social reporting procedures
- Mechanism for engaging stakeholders
- Absence of ongoing protests
- Others

Lifecycle Perspective





The “Real” Definition

Environmentally preferable purchasing means:

Buying better products from
better companies.



Expanded Definition

Environmentally preferable purchasing means:

Buying better products and
services from better companies.



Environmental Purchasing

Environmentally preferable purchasing means:

Buying better products from
better companies.



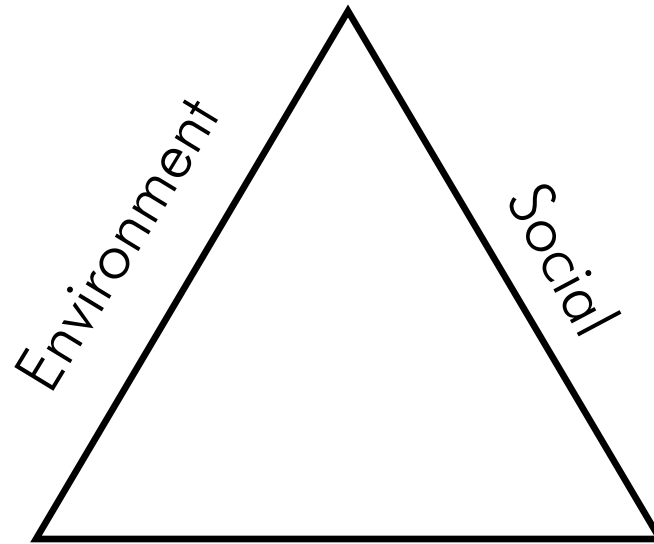
Important Caveats

- A product must work well and be affordable to be considered environmentally preferable.
- “Affordable” does not necessarily mean “less expensive.”
- “Affordable” can sometimes mean a higher initial cost.





Responsible Purchasing



Price, Performance, & Availability

Buying Green Computers

What You Need to Know

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What You Need to Know

Use the WSCA Contract



IEEE 1680 (EPEAT) Standard



Electronic Product Environmental Assessment Tool



EPEAT Tiers



EPEAT Bronze— Meets the 23 mandatory criteria



EPEAT Silver— Meets 23 mandatory criteria and at least 14 optional criteria



EPEAT Gold— Meets 23 mandatory criteria and at least 21 optional criteria



Recommended EPEAT Language

All desktops, laptops, and computer monitors provided under the contracts resulting from this RFP are required to have achieved a minimum EPEAT Bronze registration. Strong preference and additional points will be given for products that have achieved **EPEAT Silver** or **EPEAT Gold** registration and for products that have had their EPEAT claims **certified by an independent third-party**.

Vehicles

Where Can We Begin?



Environmental Impacts

- One-third of anthropogenic CO₂ emissions come from motor vehicles.
- Average car emits 91 tons of greenhouse gases during its lifetime; the average light truck emits 124 tons.
- Passenger vehicles account for 40% of the oil products consumed in the United States.



State/Local Government HEV Purchasers*

Counties

- King County, WA
- Alachua County, FL
- Marion County, FL
- Windham County, CT
- Martin County, FL
Police Dept
- Jefferson County, KY
- Lexington/Fayette
Urban County, KY
- Palm Beach County, FL

States

- New York
- New Jersey
- Washington
- California
- Oregon
- Florida
- Nevada
- Colorado
- Missouri
- Maine

Cities

- Coral Springs, FL
- Boulder, CO
- Fort Collins, CO
- Denver, CO
- Houston, TX
- Mesquite, TX
- Coppell, TX
- New York, NY
- Los Angeles, CA
- San Francisco, CA
- Austin, TX
- San Antonio, TX
- Lake Oswego, OR
- New Britain, CT
- Seattle, WA
- Boise, ID
- Dallas, TX

*Only a partial list of HEV purchasers compiled from several sources.



HEV Purchases

In January 2006, New American Dream compiled a list of 35 states and the District of Columbia buying HEVs.

- New York City – 800 HEVs
- Los Angeles – 450 HEVs

Protecting the Public



“We work to conserve as much energy as we can—that’s our obligation to the American people. We spend taxpayers’ money wisely, and that means we don’t run experiments. We’ve got a good car here. Hopefully American car companies will offer something similar, soon.” – Wyatt Earp, Marion County, Florida

Responsible Purchasing History

Why Focus on Government Purchasing?



Government Purchasing History

- Clothing sizes during the Civil War
- Small Business Administration
- Automobile airbags
- Energy-efficient computers
- Recycled-content paper

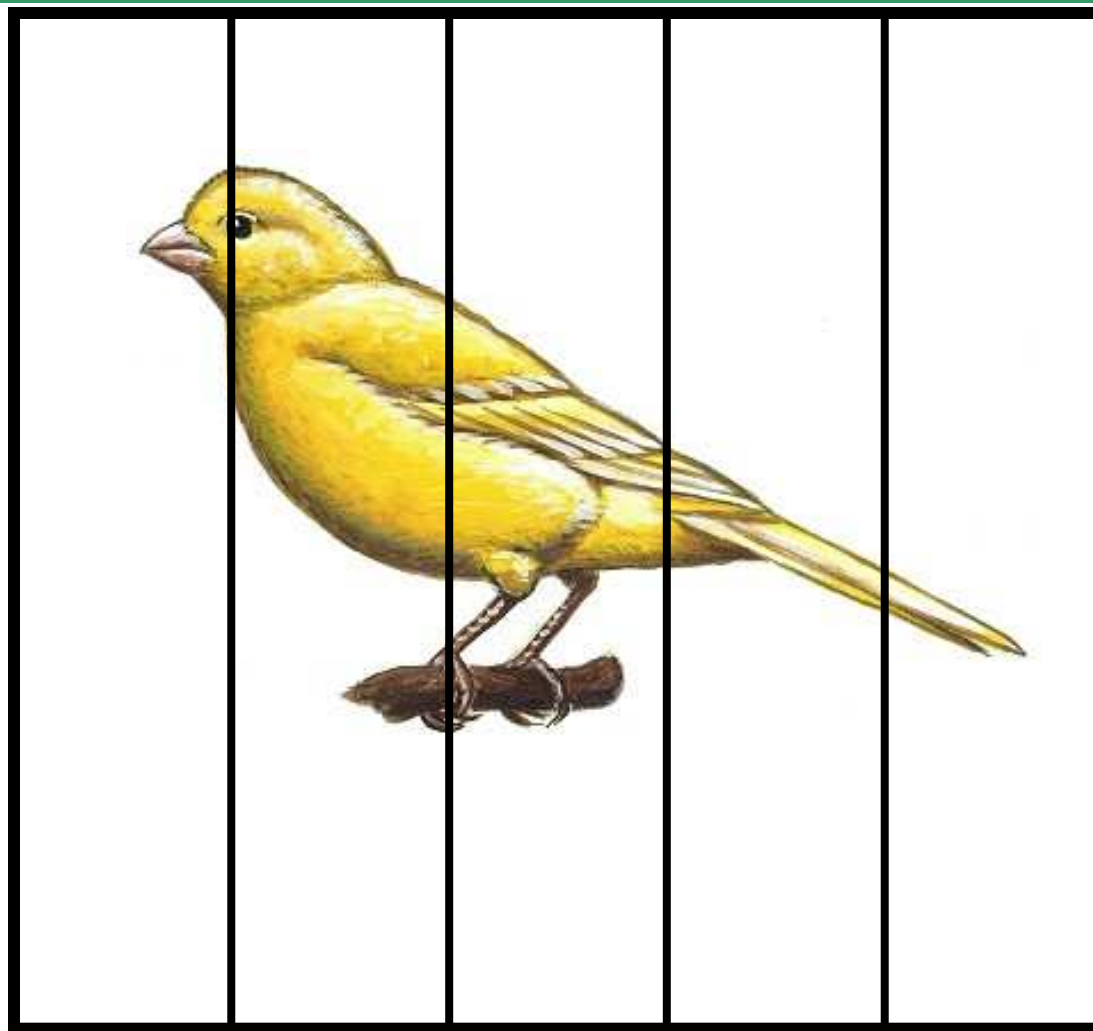
Why Responsible Purchasing?

Why Should I Care?

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most sustainable companies



Common Sense





Common Sense

Which Product Would You Choose?





Common Sense

Which Product Would You Choose?



CARCINOGENS!!



Common Sense

Which Product Would You Choose?

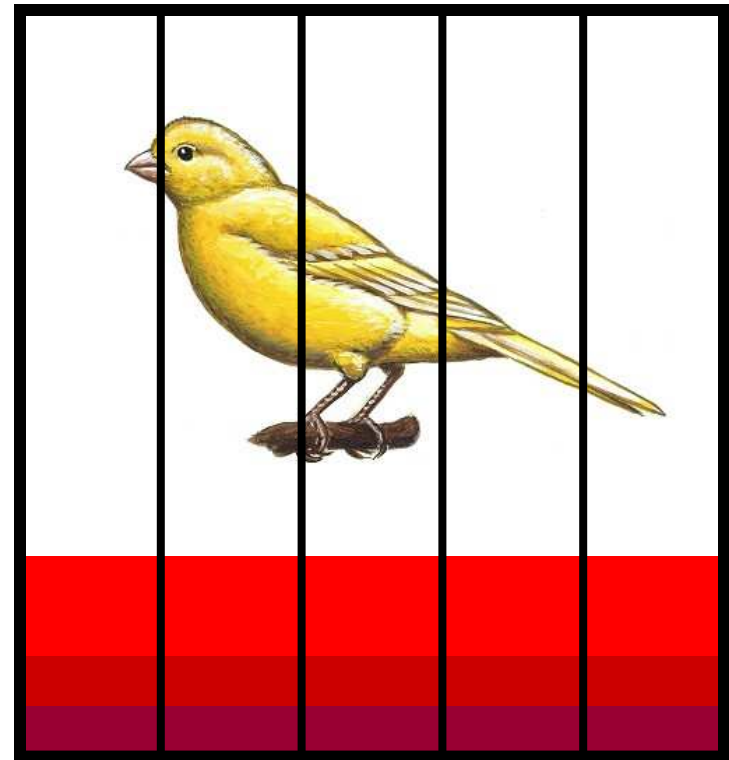


REPRODUCTIVE TOXINS!!



Common Sense

Which Product Would You Choose?



OTHER HAZARDS!!



Common Sense

Which Product Would You Choose?





Why Responsible Purchasing?

- Regulatory requirements
- Executive Order mandates
- Policy directives
- Cost savings
- Environmental benefits



The Governor Says So...

- 20 x 10 Initiative on energy efficiency
- 30 MPG initiative
- Green products available through state stores
- This training to encourage you to do even more





Cost Savings

- Lower compliance costs
- Lower disposal costs
- Lower liability costs
- Lower injury costs
- Higher productivity



Quantifying Success

- Lee County, Florida, eliminated hazardous waste production in its fleet maintenance facilities and is saving \$17,000 annually.
- Cape May, New Jersey, saved \$45,000 over five years by adopting integrated pest management practices.
- Santa Monica, California, switched to green cleaning products eliminating 3,200 pounds of hazardous materials and reducing cleaning costs five percent.
- Phoenix, Arizona, rated 5,800 chemical products based on their toxicity and potential for environmental harm.



Aberdeen Proving Ground

- Paints meeting the standard are on average \$1.76 less expensive per gallon.
- Saves \$25,000 annually in avoided disposal costs.
- Re-Nu-It facility reduces paint purchases by \$10,000 annually.
- Total savings: \$60,000 a year.



Paint Resources



EPA's *Painting the Town Green*
(EPA742-R-99-005) November
1999

www.epa.gov/oppt/epp/pdfs/paint.pdf

EcoLogo

www.ecologo.org

Green Seal

www.greenseal.org



Pentagon Renovation

- Decrease energy consumption 55 to 60 percent.
- Reduce water consumption by 31 million gallons, a 25 percent savings.
- Double the recycling rate.
- Improve indoor air quality.
- Increase worker productivity 6 percent, a \$72 million annual savings.

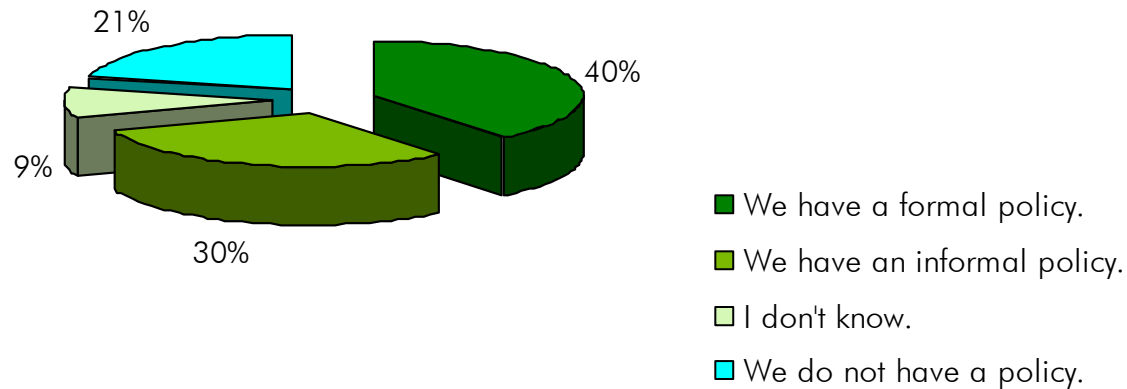


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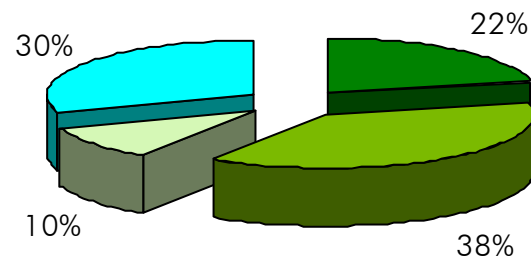


Green Purchasing Policies

environmental/sustainability policy?



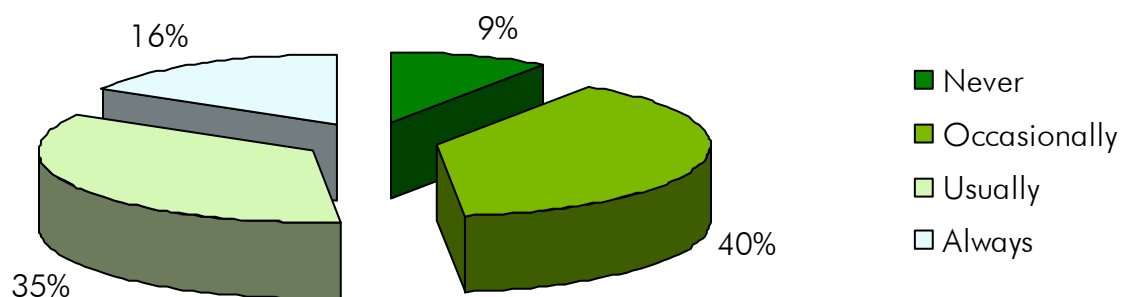
green purchasing policy?



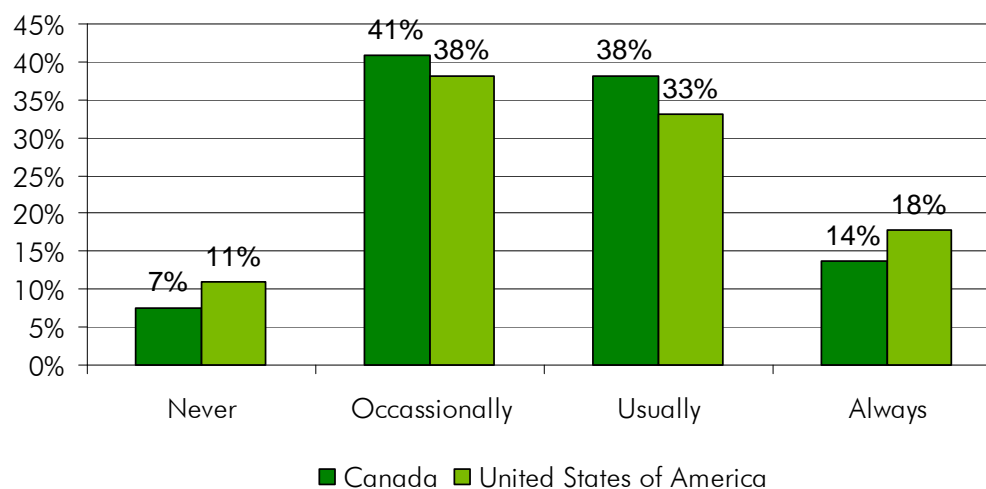


Green Spending

We actually consider 'green' ...



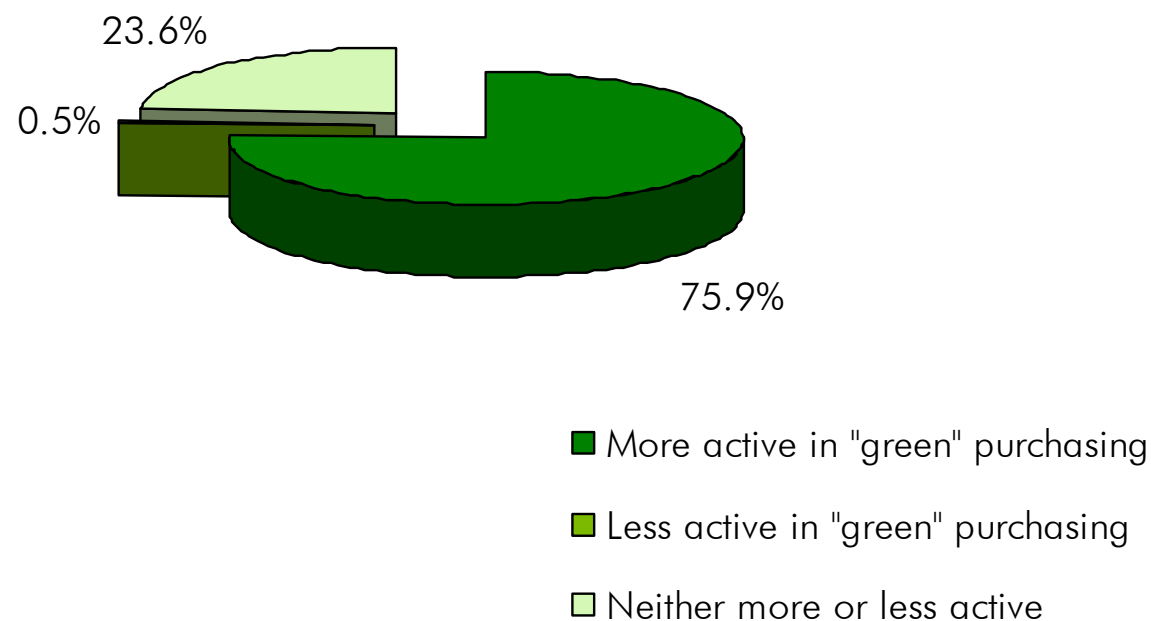
actual green spending by nation





Green will continue to grow...

In two years my organization will be...



Top Ten Tricks of Responsible Purchasing

Making Green Purchasing Work

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Responsible Purchasing Strategies

1. Follow the Feds
2. Push the Suppliers
3. Cooperate with Others
4. Review Price Preferences
5. Examine Lifecycle Costs
6. Evaluate Best Value
7. Empower a Green Team
8. Develop Measurable Goals
9. Use Eco-Labels
10. Plagiarize



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Federal Green Purchasing

The Federal government has seven related green purchasing programs:

- “Buy Recycled” – aka Comprehensive Procurement Guidelines (CPG)
- Energy Star and energy-efficient products
- Alternative fuel vehicles and alternative fuels
- Biobased
- Non-ozone depleting substances
- Environmentally Preferable Purchasing (EPP)
- Priority chemicals



Buy Recycled (CPG)

The Comprehensive Procurement Guidelines (CPG) Program:

- Established by RCRA Section 6002
- Run by the U.S. Environmental Protection Agency (EPA)
- Identifies recycled-content products
- Recommends recycled-content percentages



CPG Product Categories

- Paper and Paper Products
- Vehicles
- Construction
- Transportation
- Parks and Recreation
- Landscaping
- Non-Paper Office Products
- Miscellaneous

www.epa.gov/cpg



Energy Star

There are more than 40 categories of energy-efficient products broken into the following major groupings:

- Appliances
- Heating and Cooling
- Home Electronics
- Office Equipment
- Lighting
- Commercial Food Services
- Other



www.energystar.gov



Biobased Products

- The 2002 Farm Bill included extensive requirements for federal agencies to buy biobased products.
- The U.S. Department of Agriculture has established a program similar to EPA's "Buy Recycled" (CPG) program.



Biobased Products

| Item | Description | Recommended Minimum Biobased Content |
|-----------------------------------|---|--------------------------------------|
| Mobile Equipment Hydraulic Fluids | Hydraulic fluids used in non-stationary equipment such as tractors and lawn or construction equipment | 24% |
| Urethane Roof Coatings | Protective roof coatings used on many commercial roof decks. | 62% |
| Water Tank Coatings | Protective linings used in potable water storage systems | 62% |
| Diesel Fuel Additives | Lubricating additives to reduce the sulfur content of diesel fuels | 93% |
| Penetrating Lubricants | Materials used to provide light lubrication and corrosion resistance for power tools, gears, valves, chains, and cables or to loosen tight nuts and bolts | 71% |
| Bedding, Bed Linens, and Towels | Bed coverings such as blankets, bedspreads, and comforters; sheets and pillowcases; and towels | 18%* |



Priority Chemicals

- Executive Order 13138 requires federal agencies to cut use of priority chemicals as identified by EPA by 50%.
- The top five priority chemicals are:
 - Cadmium
 - Lead
 - Polychlorinated biphenyls (PCBs)
 - Mercury
 - Naphthalene



Priority Chemicals

- There are safer alternatives for each of the top five priority chemicals.
- In addition, EPA has a list of an additional 31 priority chemicals that should also be avoided.



Alternative Fuel & Vehicles

- The Energy Policy Act requires federal agencies to purchase alternative fueled vehicles and fuels.
- Extensive information is available at:
<www.eere.energy.gov/afdc/index.html>



Non-Ozone Depleting Chemicals

- The Clean Air Act prohibits purchases of ozone depleting substances.
- EPA maintains a list of alternatives at:
<www.epa.gov/spdpublic/snap/substitutes.html>



EPP Program

- EPA's Environmentally Preferable Purchasing Program encourages purchasers to examine multiple environmental attributes when making purchasing decisions.
- The EPP Program maintains an extensive list of resources at:

<www.epa.gov/oppt/epp>



Additional Information

The White House Office of the Federal Environmental Executive maintains an extensive website on federal green purchasing requirements, activities, and resources.

[<www.ofee.gov/gp/gp.htm>](http://www.ofee.gov/gp/gp.htm)



Additional Information

For additional information:

- Alternative Fuels & Vehicles -- <www.eere.energy.gov/afdc/index.html>
- Biobased Products -- <www.biobased.oce.usda.gov>
- Buy Recycled -- <www.epa.gov/cpg>
- Energy Star -- <www.energystar.gov>
- Environmentally Preferable Purchasing – <www.epa.gov/oppt/epp>
- Ozone Depleting Chemicals --
<www.epa.gov/spdpublic/snap/substitutes.html>
- Priority Chemicals -- <www.ofee.gov/gp/pchemical.html>



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Supplier Outreach

- Alert vendors that environmental impacts are important.
- Require them to identify green opportunities.
- Identify specific areas of concern.
- Conduct vendor surveys.
- Hold vendor fairs.



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Cooperative Efforts

- Pool resources
- Avoid duplicating efforts
- Larger buying power means cost savings



Cooperative Efforts

- Check out:
 - WSCA – www.aboutwsca.org
 - U.S. Communities – www.uscommunities.org
 - RPN – www.responsiblepurchasing.org
 - NIGP Knowledge Community – www.nigp.org



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Price Preference

- Express a willingness to pay more for products or services with desired environmental attributes.
- Being used by a number of U.S. communities, including:
 - Chatham County, North Carolina (up to 15%)
 - Cincinnati, Ohio (up to 3%)
 - Jackson County, Missouri (up to 15%)
 - Kalamazoo County, Michigan (up to 10%)
 - Kansas City, Missouri (up to 15%)
 - San Diego County, California (up to 5%)
 - Vermont – 5% for recycled-content products.
 - Washington – 10% for EPA-designated recycled-content products



Price Preference

- Some price preferences are limited to recycled-content products only:

- Hendersonville, North Carolina (up to 15%)
- Indiana (up to 15%)
- King County, Washington (up to 10% for re-refined oil; up to 15% for paper)
- Minnesota (up to 10%)
- Morro Bay, California (up to 10%)
- New Jersey (up to 15%)
- Oregon (up to 5%)
- Pasquotank County, North Carolina (up to 10%)
- Phoenix, Arizona (up to 10% and up to 15% for paper)

- San Mateo County, California (up to 10%)
- Santa Barbara, California (up to 12% for paper)
- Santa Clarita, California (up to 10%)
- Ventura County, California (up to 10% for paper)
- Vermont (up to 5%)
- Washington (up to 10%)

29 states have price preferences for recycled-content paper



Price Preferences

| Product A | Product B |
|-----------|-----------|
| \$1,734 | \$1,873 |



Price Preferences

Adding a 10% Price Preference

| Product A | Product B |
|-----------|------------------|
| \$1,734 | \$1,873 x .90 |
| \$1,734 | \$1,686 |



Responsible Purchasing Strategies

1. Follow the Feds
2. Push the Suppliers
3. Cooperate with Others
4. Review Price Preferences
5. Examine Lifecycle Costs
6. Evaluate Best Value
7. Empower a Green Team
8. Develop Measurable Goals
9. Use Eco-Labels
10. Plagiarize



Lifecycle Costing

- When comparing costs, examine the total financial cost of the product throughout its useful life.
- Costs to consider:
 - Initial cost
 - Operating costs
 - Maintenance costs
 - Depreciation costs
 - Upgrade costs
 - Disposal costs



Alternative HVAC Systems

| Base Case HVAC Technology | | | | |
|---------------------------------------|----------------|--------|----------------------|---------------|
| | Base Date Cost | Year | Discount Factor (3%) | Present Value |
| Investment Cost | \$103,000 | Base | 1.00 | \$103,000 |
| Fan Replacement | \$12,000 | 12 | 0.70 | \$8,417 |
| Residual Value | <-\$3,500> | 20 | 0.55 | <-\$1,938> |
| Electricity | \$20,000 | Annual | 14.88 | \$297,549 |
| O&M | \$7,000 | Annual | 14.88 | \$104,142 |
| Total | | | | \$511,171 |
| Alternative – “Green” HVAC Technology | | | | |
| Investment Cost | \$110,000 | Base | 1.00 | \$110,000 |
| Fan Replacement | \$12,500 | 12 | 0.70 | \$8,767 |
| Residual Value | <-\$3,700> | 20 | 0.55 | <-\$2,049> |
| Electricity | \$13,000 | Annual | 14.88 | \$193,407 |
| O&M | \$8,000 | Annual | 14.88 | \$119,020 |
| Total | | | | \$429,146 |



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Best Value

- Assign relative weights to price, performance, and environmental criteria.
- Score all competing products.
- Compare the results.



Best Value

| Overall Ratings | | Within types, in performance order | | | | | | | | <div> ● Excellent ◐ Very good ○ Good ◑ Fair ● Poor </div> | |
|----------------------------------|-----------------------------|------------------------------------|------------------------|---------------|------------|--------------|-------------------|----------------------|------------------------|--|--|
| KEY NO. | BRAND & MODEL | PRICE | OVERALL SCORE | PRINT QUALITY | MEGAPIXELS | WEIGHT (OZ.) | FLASH RANGE (FT.) | BATTERY LIFE (SHOTS) | NEXT-SHOT DELAY (SEC.) | RECOMMENDATIONS & NOTES | |
| | | | 0 P F G VG E 100 | | | | | | | | |
| 3- TO 5-MEGAPIXEL CAMERAS | | | | | | | | | | | |
| 1 | Sony DSC-F707 | \$1,000 | <div><div></div></div> | ● | 5 | 25 | 15 | 240 | 2 | Very good, but expensive. Uses camcorder-type battery (included). Infrared-sensitive mode. Secure grip. Electronic viewfinder, tiltable body. | |
| 2 | Canon PowerShot G2 | 800 | <div><div></div></div> | ● | 4 | 18 | 15 | 600 | 3 | Very good, with pro-style features. Uses camcorder-type battery (included). Swing out LCD display. Displays histogram in preview mode. Secure grip. Hot shoe. | |
| 3 | Olympus Camedia C-3040 Zoom | 600 | <div><div></div></div> | ● | 3.3 | 14 | 18 | 320 | 3 | Very good, with secure grip. Battery life approx. 3,500 shots using lithium batteries. Complicated menus. Can record audio and movie clips. | |
| 4 | Olympus Camedia D-40 Zoom | 600 | <div><div></div></div> | ● | 4.1 | 8 | 10 | 50 | 4 | Very good and small, with only shallow grip. Battery life approx. 700 shots using lithium batteries. | |
| 5 | Fujifilm FinePix F601 Z | 550 | <div><div></div></div> | ● | 3 | 10 | 15 | 250 | 2 | Good, and allows you to crop images in camera. | |
| 6 | Sony Cyber-shot DSC-S75 | 500 | <div><div></div></div> | ● | 3.3 | 16 | 10 | 300 | 3 | Very good, and uses camcorder-type battery (included). Secure grip. Can record audio and movie clips. | |
| 7 | HP PhotoSmart 812 | 500 | <div><div></div></div> | ● | 4.1 | 9 | 9 | 80 | 4 | Very good, with direct printing to HP printers. | |
| | Kodak EasyShare | | | | | | | | | Very good. Supplied AA batteries gave fair | |



Best Value

| | Product A | Product B | Product C |
|---------------|-----------|-----------|-----------|
| Price | | | |
| Performance | | | |
| Environmental | | | |
| Total | | | |



Best Value

| | Product A | Product B | Product C |
|------------------------------|-----------|-----------|-----------|
| Price (60 points) | | | |
| Performance (25 points) | | | |
| Environmental (15 points) | | | |
| Total (100 points) | | | |



Best Value

| | Product A | Product B | Product C |
|------------------------------|-----------|-----------|-----------|
| Price (60 points) | \$1,000 | \$1,050 | \$1,100 |
| Performance (25 points) | | | |
| Environmental (15 points) | | | |
| Total (100 points) | | | |



Best Value

| | Product A | Product B | Product C |
|-------------------------------------|----------------------|----------------------|----------------------|
| Price (60 points) | \$1,000 60 points | \$1,050 57 points | \$1,100 54 points |
| Performance (25 points) | | | |
| Environmental (15 points) | | | |
| Total (100 points) | | | |



Best Value

| | Product A | Product B | Product C |
|-------------------------------------|----------------------|----------------------|----------------------|
| Price (60 points) | \$1,000 60 points | \$1,050 57 points | \$1,100 54 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | | | |
| Total (100 points) | | | |



Best Value

| | Product A | Product B | Product C |
|-------------------------------------|----------------------|----------------------|----------------------|
| Price (60 points) | \$1,000 60 points | \$1,050 57 points | \$1,100 54 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | 11 points | 15 points | 13 points |
| Total (100 points) | 91 points | 94 points | 91 points |



Best Value

| | Product A | Product B | Product C |
|-------------------------------------|----------------------|----------------------|----------------------|
| Price (60 points) | \$1,000 60 points | \$1,050 57 points | \$1,100 54 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | 11 points | 15 points | 13 points |
| Total (100 points) | 91 points | 94 points | 91 points |



Best Value - Extended

| | Product A | Product B | Product C |
|---------------|-----------|-----------|-----------|
| Price | | | |
| Performance | | | |
| Environmental | | | |
| Social | | | |
| Total | | | |



Best Value - Extended

| | Product A | Product B | Product C |
|------------------------------|-----------|-----------|-----------|
| Price (50 points) | | | |
| Performance (25 points) | | | |
| Environmental (15 points) | | | |
| Social (10 points) | | | |
| Total (100 points) | | | |



Best Value - Extended

| | Product A | Product B | Product C |
|------------------------------|-----------|-----------|-----------|
| Price (50 points) | \$1,000 | \$1,050 | \$1,100 |
| Performance (25 points) | | | |
| Environmental (15 points) | | | |
| Social (10 points) | | | |
| Total (100 points) | | | |



Best Value - Extended

| | Product A | Product B | Product C |
|---------------------------|----------------------|----------------------|----------------------|
| Price (50 points) | \$1,000 50 points | \$1,050 47 points | \$1,100 45 points |
| Performance (25 points) | | | |
| Environmental (15 points) | | | |
| Social (10 points) | | | |
| Total (100 points) | | | |



Best Value - Extended

| | Product A | Product B | Product C |
|------------------------------|----------------------|----------------------|----------------------|
| Price (50 points) | \$1,000 50 points | \$1,050 47 points | \$1,100 45 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | | | |
| Social (10 points) | | | |
| Total (100 points) | | | |



Best Value - Extended

| | Product A | Product B | Product C |
|------------------------------|----------------------|----------------------|----------------------|
| Price (50 points) | \$1,000 50 points | \$1,050 47 points | \$1,100 45 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | 11 points | 15 points | 13 points |
| Social (10 points) | | | |
| Total (100 points) | | | |



Best Value - Extended

| | Product A | Product B | Product C |
|-------------------------------------|----------------------|----------------------|----------------------|
| Price (50 points) | \$1,000 50 points | \$1,050 47 points | \$1,100 45 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | 11 points | 15 points | 13 points |
| Social (10 points) | 10 | 8 | 10 |
| Total (100 points) | | | |



Best Value - Extended

| | Product A | Product B | Product C |
|-------------------------------------|----------------------|----------------------|----------------------|
| Price (50 points) | \$1,000 50 points | \$1,050 47 points | \$1,100 45 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | 11 points | 15 points | 13 points |
| Social (10 points) | 10 | 8 | 10 |
| Total (100 points) | 91 points | 92 points | 92 points |



Best Value - Extended

| | Product A | Product B | Product C |
|-------------------------------------|----------------------|----------------------|----------------------|
| Price (50 points) | \$1,000 50 points | \$1,050 47 points | \$1,100 45 points |
| Performance (25 points) | 20 points | 22 points | 24 points |
| Environmental (15 points) | 11 points | 15 points | 13 points |
| Social (10 points) | 10 | 8 | 10 |
| Total (100 points) | 91 points | 92 points | 92 points |



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Empower a Green Team

"The Department of Administrative Services shall appoint a Sustainable Supplier Council. In consultation with the council, the department, by June 2001, shall develop sustainability purchasing policies, targets and benchmarks for each of the following areas: paper products; building construction; cleaning products and coatings; general purpose motor vehicles and office furniture."

-- Oregon



Green Team Members

- Senior management support
- Environmental “expert”
- Purchasing official
- Users



Responsible Purchasing Strategies

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Develop Measurable Goals & Reporting Requirements

- Annual report
- Track “green” purchases
- Track number of “green” contracts
- Quantify environmental improvements



Responsible Purchasing Strategies

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2. Push the Suppliers
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6. Evaluate Best Value
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8. Develop Measurable Goals
9. Use Eco-Labels
10. Plagiarize



Use Eco-Labels

The environmental standards most frequently cited by purchasing professionals include:



<www.ecologo.org>

- Founded 1988
- 120 standards
- 7,000 certified products



<www.energystar.gov>

- Founded 1992
- 50 standards
- "Thousands and thousands" of certified products



<www.greenseal.org>

- Founded 1989
- 30 standards
- 2,000 certified products



Lots of Labels Around

A partial list of labels currently being used:

- Blue Angel
- CFPA
- CPG
- DfE
- Eco Mark
- EcoLogo
- Ecomark
- Eco-OK
- Energy Star
- Environmental Choice
- EPEAT
- EU Flower
- Fair Trade
- FSC
- GBI
- Good Green Buy
- Green Label
- Green Seal
- GREENGUARD
- Greenstar
- LEED
- MSC
- Nordic Swan
- Process Chlorine Free
- SCS
- SFI
- TCO
- Totally Chlorine Free
- USDA-Organic
- WaterSense



Different Labels for Different Product Categories

Within every product category, there might be a variety of relevant standards. Examples include:

Cleaning:



Note: DfE is process-based not standard-based.

Computers:



Office Electronics:



Under Development



Comparing Eco-Labels

WARNING:

Not All Environmental Claims Are Created Equal

Learn to ask about:

- Type of standard
- Validity of the standard
- Standard setting process
- Verification process





Responsible Purchasing Strategies

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Plagiarize

- NIGP – <www.nigp.org>
- Center for a New American Dream
<www.newdream.org/procure>
- EPP Contracts Database
<www.epa.gov/oppt/epp/database.htm>
- EPPNet <www.nerc.org/eppnet.html>
- King County, Washington; Massachusetts;
Minnesota; Santa Monica, California

Four Bonus Tricks

More Useful Ideas

July 24, 2008

scot case
scase@terrachoice.com
www.terrachoice.com
610 779-3770

helping grow the world's
most sustainable companies



Incentives

- Awards
- Recognition
- Performance reviews
- Cost savings



Training

- New employee orientation
- Purchasing training
- Credit card training
- Senior management training



Pilot Projects

- Test the products
- Test the process



Green Purchasing Policy

- Document responsible purchasing procedures.
- Give purchasers explicit permission to buy green.
- Require agencies to buy green.



Policy Components

- Define responsible purchasing
- Describe importance of environmental purchasing
- Identify desired environmental attributes
- Establish initial commodity/service priorities
- Balance environmental considerations with traditional performance, availability, and cost concerns
- Review and modify specifications



Policy Components (cont.)

- Empower a green purchasing team
- Assign responsibilities and establish deadlines
- Reference existing environmental labeling and certification programs
- Create a communications plan
- Develop measurable goals and reporting requirements
- Review policy regularly



Assign Responsibilities

King County, Washington

| Action By: | Action: |
|--|---|
| Purchasing Agency and Solid Waste Division | 7.1 Designate products, processes, and procedures to be evaluated..., maintain a designated product list, and periodically transmit this information to departments ... 7.2 Provide ... technical assistance ... |
| County Departments, Offices, and Agencies | 7.3 Assign appropriate personnel to evaluate each designated product ... 7.4 Revise contracting [procedures] ... 7.5 Transmit evaluation results and purchase data for designated products ... to the Purchasing Agency by July 30th each year. |
| Purchasing Agency and Solid Waste Division | 7.6 Transmit an annual report to the County Council on the status of policy implementation. |



Important Caveats

- The ultimate objective is not to develop a wonderful policy, it is to implement wonderful actions.
- A perfect policy does not do any good unless it is implemented.
- It might be better to focus efforts on green purchasing activities than to focus on green purchasing policies.

Valuable Resources

Policies and Procedures

July 24, 2008

scot case
scase@terrachoice.com
www.terrachoice.com
610 779-3770

helping grow the world's
most sustainable companies

Cool Canadian Resource

Green Procurement Template Part A - Questionnaire

GREEN PROCUREMENT TEMPLATE – Part A : Questionnaire

For those commodities that include multiple types of goods/services that vary significantly, one template should be prepared for each major type.

Questions to be answered:

Are environmental issues associated with the manufacturing and procurement of the item, including planning, acquisition, use/maintenance and disposal?

- | | |
|--|---|
| <input type="checkbox"/> GHG emissions | <input type="checkbox"/> Solid waste |
| <input type="checkbox"/> Outdoor air contaminants | <input type="checkbox"/> Hazardous waste |
| <input type="checkbox"/> Energy and water efficiency | <input type="checkbox"/> Toxic, hazardous chemicals (including indoor VOCs) |
| <input type="checkbox"/> Ozone-depleting substances | <input type="checkbox"/> Other (specify): |

1. Is the reduction of consumption being addressed as part of the Green Procurement strategy?
2. Are surplus assets being used instead of buying new?
3. Are there alternative goods/services being considered which minimize environmental impacts?
4. Are there other internal initiatives being implemented that have green procurement implications? (i.e. e-procurement, asset rationalization studies, etc.)
5. What Optional environmental criteria are currently being included in RFP/RFSOs?
6. What Mandatory environmental criteria are currently being included RFP/RFSOs?
7. What environmental conditions are placed on suppliers, in terms of delivery, maintenance and disposal of goods and/or services?
8. When was each of the above green procurement actions first incorporated into bid specifications?
9. What new criteria are being introduced in the next RFSO vs. the last one?
10. Do you anticipate that any optional environmental criteria will become mandatory in the future? What will trigger this to occur? For example, when 50% of supplier base is able to meet optional environmental criteria, a commodity group may decide to make optional criteria mandatory.
11. What environmental criteria that are not currently being used are being considered for future RFSO/RFPs? How is communication with suppliers being conducted, to ensure that they are evolving their products to meet future environmental requirements?
12. Do suppliers currently provide a listing of environmental attributes offered within their goods/services? If yes, is this information readily accessible to government purchasers wishing to compare suppliers when reviewing standing offers?
13. Note any other Green Procurement initiatives being planned.
14. What are the timelines for each of the above?

What standards are in use for environmental criteria? (i.e. % recycled content, level of VOC emission, % recyclable, hazardous material content, etc.)

1. Eco-labels in use (i.e. Environmental Choice Program (ECP/Précédents), Green Seal, Water Mark, EnviroSeal, etc.)

Identify any certification programs that are used to qualify products. Even if an Eco-label is not specifically required, are there elements of the certification criteria that can be used in developing bid specifications?

2. Indicate any industry-specific standards

Is there an industry association that publishes standardized criteria or best practices for addressing environmental issues associated with the goods/services being procured?

3. Note any relevant policies or legislation that are used to address environmental issues associated with the commodity.

1. What features of environmentally preferable goods/services in the commodity include?
2. What features would be required to qualify a goods/service as "best" in class?

1. What steps do suppliers take to minimize packaging?
2. Is packaging re-usable or at minimum recyclable?
3. If recyclable, who is responsible for recycling it - GOC or supplier?
4. Are there plans to have the supplier address all packaging disposal?

4. What barriers exist to implementing optional and/or mandatory environmental criteria? What solutions are being pursued to address the issue?

What quantitative measures can be used to indicate progress of the Commodity's Implementation of Green Procurement? Consider items such as:

- Reduction of consumption
- VOC emissions
- Hazardous waste generation
- Recycled content in manufactured product
- Recyclability at end of life
- Packaging minimization
- Asset utilization efficiency



Responsible Purchasing Network

RPN
Responsible Purchasing Network
Center for a New American Dream

Because Every Purchase Matters

Choose a Purchasing Guide: Cleaners

Cleaners: Specifications

Generally, it is helpful to first adopt a policy that addresses social and environmental issues before specifying your purchase, but good specifications can also be issued without an overriding policy in place. These specifications incorporate many of the best social and environmental criteria available.

Documents on this page require [Acrobat Reader](#) software.

Model Specification

Massachusetts RFR#GR016 Cleaning Products, Environmentally Preferable, 2002.

In 2002, Massachusetts issued a Request for Response specifically establishing Green Seal certification as the minimum standard for cleaning products, including: General Purpose Cleaners, Bathroom Cleaners, Glass Cleaners, Carpet Cleaners, Disinfectants, Floor Care Products, and Hand Soaps. Since then, a number of other states and local governments have also issued specifications for green cleaners.

More Specs

State

Connecticut, Environmentally Preferable Cleaning Products RFP, 2004
Massachusetts, Cleaning Products, Environmentally Preferable, RFR, 2002

Overview
[Social & Environmental](#)
[Best Practices](#)
[Cost, Quality, & Supply](#)
[Policies](#)

Specifications
[Standards](#)
[Products](#)
[Handy Facts](#)
[Definitions](#)
[Credits & Endnotes](#)

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Feedback on this Guide
Please contact us with corrections, additions, policies, or questions.
[Submit Feedback](#)

Login

Username (email):

www.responsiblepurchasing.org



Resources

- Responsible Purchasing Network website -- Includes more than 80 environmental purchasing policies and links to several additional resources <www.newdream.org/procure/start/develop.php>
- “Policy Updates Inspire Environmental Purchasing,” *Government Procurement*, February 2004 – Article provides the basis for much of this discussion. <www.responsible sourcing.net/resources/policies.pdf>
- “Environmental Purchasing Policies 101,” Commission for Environmental Cooperation – Includes extensive excerpts from lots of policies and a generic sample policy.
<www.cec.org/files/pdf//NAGPI%20Policy%20Paper2e.pdf>



Reminder

"Not all chemicals are bad. Without chemicals such as hydrogen and oxygen, for example, there would be no way to make water, a vital ingredient in beer."

— *Dave Barry*



Pest Control

Where Can We Begin?



Pest Management

- Every year, the United States uses 4.5 billion pounds of chemicals to control insects, rodents, and weeds.
- These activities are regulated under CERCLA, CWA, CAA, EPCRA, FIFRA, and ESA.



Integrated Pest Management

- Cape May County, New Jersey
- Chatham County, North Carolina
- Massachusetts
- King County, Washington
- Monroe County, Indiana
- Portland, Oregon
- San Francisco, California
- Santa Monica, California



IPM in San Francisco





IPM in San Francisco

- IPM ordinance passed in 1996.
- Established a citywide IPM coordinator.
- Pest control contractors required to use less toxic approaches first.
- If needed, contractors must select from a list of 45 reduced-risk pesticides.
- One-time exemptions available from IPM coordinator.



IPM in San Francisco

- San Francisco's Recreation and Parks Department reduced pesticide use by 60 percent.
- In 1999, 72 percent of pesticide contractor visits required no pesticide applications.



IPM Cost Comparison

| Base Case "Cover Spray" Application | | | | |
|--|----------------|------------|----------------------|---------------|
| | Base Date Cost | Occurrence | Discount Factor (3%) | Present Value |
| Investment Cost | \$5,000 | Base Year | 1.00 | \$5,000 |
| Pesticides | \$7,970 | Annual | 14.88 | \$118,573 |
| Monitoring | \$0 | Annual | 14.88 | \$0 |
| Other Labor | \$2,500 | Annual | 14.88 | \$37,194 |
| Total | | | | \$160,707 |
| Alternative – Integrated Pest Management | | | | |
| Investment Cost | \$10,000 | Base Year | 1.00 | \$10,000 |
| Pesticides | \$3,583 | Annual | 14.88 | \$53,306 |
| Monitoring | \$2,642 | Annual | 14.88 | \$39,306 |
| Other Labor | \$2,500 | Annual | 14.88 | \$37,194 |
| Total | | | | \$139,806 |



Other IPM Success Stories

- Monroe County, Indiana, decreased pest control costs by 35 percent and pesticide use by 90 percent.
- Santa Monica, California, reduced pest control costs by 30 percent and pest complaints have decreased.
- Cape May County, New Jersey, saved \$45,000 over five years.



IPM Resources

EPA has an extensive list of resources at
www.epa.gov/oppt/epp/ipm.htm

Lawn Care Products

Where Can We Begin?



Lawn Care

- Buying products versus buying services.
- Can place the burden of identifying better practices on the bidders through a request for qualifications (RFQ) process.



Lawn Care

- An organic-based lawn care franchise service with 56 franchise locations in 23 states serving 45,000 customers and generating over \$20 million in annual revenues.
- Beginning to service government clients, including State of Vermont and numerous college campuses.



EPPNet

From Sarasota County, Florida –

“I have prepared an Environmental Landscape Management (ELM) bid specifications that we use for annual contracts with specific language regarding least toxic pest control and fertilization requirements to minimize negative impacts to our water resources.”

www.nerc.org/eppnet.html

Using Eco-Labels Effectively

Can Someone Else Tell Me What's Green?



Environmental Claims are Growing

- Eco-safe
- Environmentally friendly
- Earth friendly
- Earth smart
- Environmentally safe
- Environmentally preferable
- Essentially non-toxic
- Practically non-toxic
- Made with non-toxic ingredients
- Degradable
- Biodegradable
- Compostable
- Environmentally safe
- CFC-free
- Ozone friendly
- Recyclable

According to the FTC:
FALSE CLAIMS



FTC Green Marketing Guidelines

GENERAL

For The Consumer

877-FTC-HELP

www.ftc.gov

FTC FACTS for Consumers

Sorting Out 'Green' Advertising Claims

Grocery shelves, hardware stores, craft shops, and other retail operations are filled with products and packages announcing environmental features that may influence your purchasing decisions. But when it comes to products and packaging, what do claims like "environmentally safe," "recyclable," "biodegradable" or "ozone friendly" really mean? The Federal Trade Commission (FTC) and the Environmental Protection Agency (EPA) want you to know.

The FTC, in cooperation with the EPA, has developed guidelines for advertisers to ensure that their environmental marketing claims don't mislead consumers. Here are six tips to help you sort through environmental claims.

ENVIRONMENTAL CLAIMS SHOULD BE SPECIFIC.

When you evaluate environmental claims in advertising and on product labels, look for specific information. Determine whether the claims apply to the product, the packaging, or both. For example, if a label says "recycled," check how much of the product or package is recycled. The fact is that unless the product or package contains 100 percent recycled materials, the label must tell you how much is recycled.

Increasingly, labels on "recycled" products tell where the recycled material comes from. "Post-consumer" material comes from previously used business or

Available at:
www.ftc.gov

Facts for Business

Environmental Marketing Claims

Federal Trade Commission
Bureau of Consumer Protection
Office of Consumer & Business Education
1-877-FTC-HELP www.ftc.gov
October 1999



Beware of Greenwashing

Green-wash (grēn'wŏsh', -wôsh') – *verb*: the act of misleading consumers regarding the environmental practices of a company or the environmental benefits of a product or service

WARNING:

Learn to ask critical questions or you might be buying products with creative marketing rather than products with legitimate environmental benefits.



Six “Sins” of Greenwashing

Sin of Fibbing – Misleading customers about the actual environmental performance of their products.

Sin of Unsubstantiated Claims – Also known as the sin of “just trust us,” some manufacturers are unable to provide proof of their environmental claims.

- Sin of Irrelevance – Factually correct, but irrelevant, environmental assessments (e.g., “CFC-free”)
- Sin of the Hidden Trade-Off – Focusing on one or two environmental facts, but ignoring other significantly more important environmental concerns.





Six “Sins” of Greenwashing



Sin of Vagueness – Broad, poorly defined environmental claims (e.g., “100 percent natural”)

Sin of Lesser of Two Evils – A product can be the most environmentally preferable product in its class, but still be an inappropriate choice (e.g., “organic cigarettes”)



To Avoid Greenwashing...

The environmental standards most frequently cited by purchasing professionals include:



<www.ecologo.org>

- Founded 1988
- 120 standards
- 7,000 certified products



<www.energystar.gov>

- Founded 1992
- 50 standards
- "Thousands and thousands" of certified products



<www.greenseal.org>

- Founded 1989
- 30 standards
- 2,000 certified products



Other Important Standards





Lots of Labels Around

A partial list of labels currently being used:

- Blue Angel
- CFPA
- CPG
- DfE
- Eco Mark
- EcoLogo
- Ecomark
- Eco-OK
- Energy Star
- Environmental Choice
- EPEAT
- EU Flower
- Fair Trade
- FSC
- GBI
- Good Green Buy
- Green Label
- Green Seal
- GREENGUARD
- Greenstar
- LEED
- MSC
- Nordic Swan
- Process Chlorine Free
- SCS
- SFI
- TCO
- Totally Chlorine Free
- USDA-Organic
- WaterSense



Different Labels for Different Product Categories

Within every product category, there might be a variety of relevant standards. Examples include:

Cleaning:



Note: DfE is process-based not standard-based.

Computers:



Office Electronics:



Under Development



Comparing Eco-Labels

WARNING:

Not All Environmental Claims Are Created Equal

Learn to ask about:

- Type of standard
- Validity of the standard
- Standard setting process
- Verification process

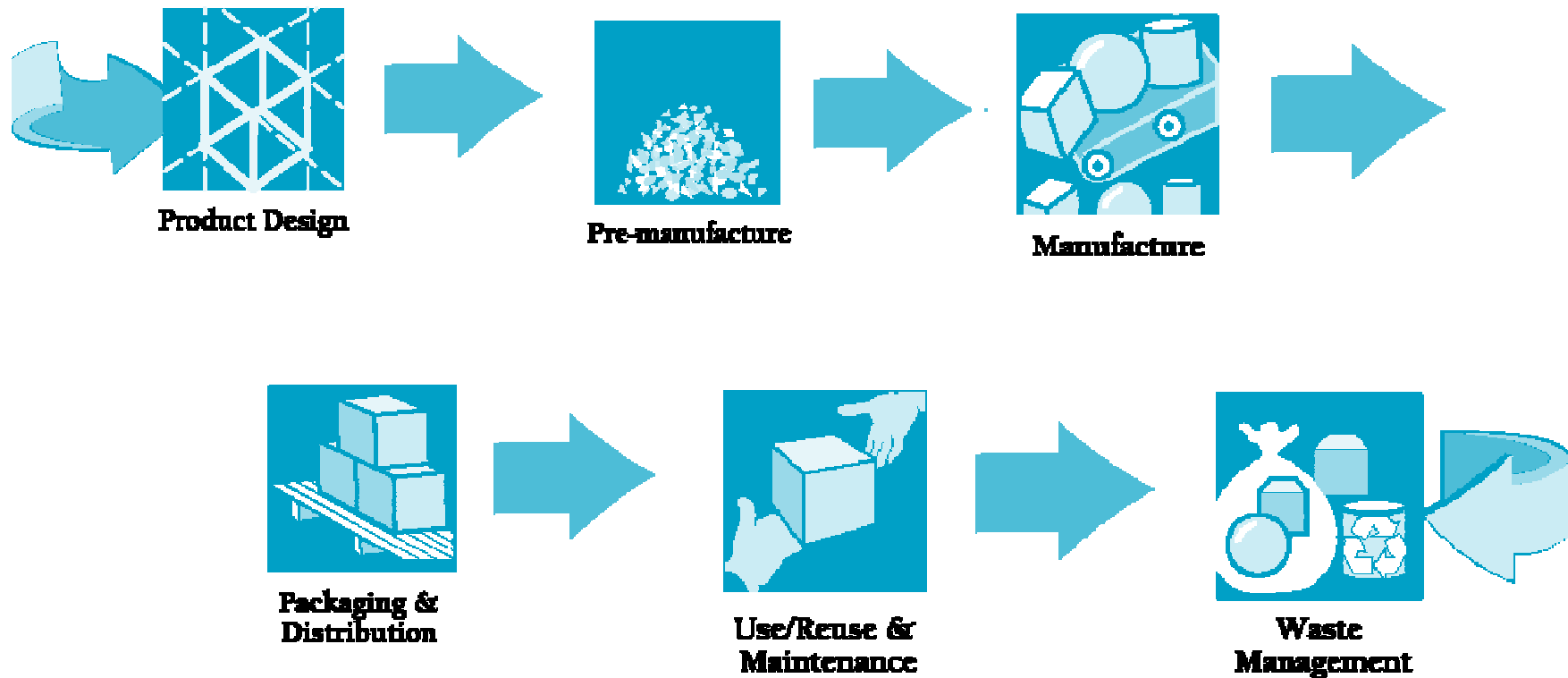




Types of Standards

- Leadership vs. “Weeding Out”
- Multi-attribute vs. Single-attribute
- Life-cycle based vs. Laundry list

Lifecycle Perspective





Standard Validity

- Clear and consistent meaning
- Very specific requirements
- Information should be meaningful and verifiable
- Must not conflict with Federal Trade Commission *Guides for the Use of Environmental Marketing Claims*.



Standard Setting Process

- No conflict of interest
- Lifecycle considerations
- Broad stakeholder participation
- Transparent development process
- Comments publicly available



Verification Process

- Self certification
- Self certification with random audits
- Independent third-party certification
- Independent third-party certification with on-site audits



Using Eco-Labels

- Researching human health and environmental considerations
- Developing purchasing specifications
- Rewarding certified products
- Requiring certified products



Eco-Label Types

- Seal of approval – ISO Type I (ISO 14024)
- Self declared, Single attribute – ISO Type II (ISO 14021)
- Report card – ISO Type III (ISO 14025)
- Multi-tier
- Hybrids

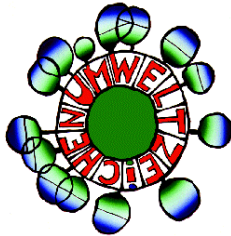


Seal of Approval (Type I)

- Defined by ISO 14024
- Environmental leadership standard
- Multi-attribute
- Require independent third-party certification
- Standards developed in an open, public, transparent process
- Monitored by the Global Ecolabelling Network (GEN)



Seal of Approval (Type I)



AUSTRIA



CHINA



CROATIA



EU



FRANCE



GERMANY



JAPAN



INDIA



NORDIC COUNTRIES



SINGAPORE



THAILAND



The CZECH REPUBLIC



THE NETHERLANDS



North America (Type I)



[<www.ecologo.org>](http://www.ecologo.org)



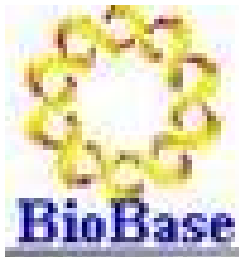
[<www.greenseal.org>](http://www.greenseal.org)

Global Ecolabelling Network: [<www.gen.gr.jp>](http://www.gen.gr.jp)



Self Declared, Single Attribute (Type II)

- Statements
 - Compostable, biodegradable, recyclable
- Symbols





Report Card (Type III)

Nutrition Facts

Serving Size 1 cup (228g)
Servings per Container 2

Amount Per Serving

| Calories 280 | Calories from Fat 120 |
|------------------------|-----------------------|
| % Daily Value* | |
| Total Fat 13g | 20% |
| Saturated Fat 5g | 25% |
| Trans Fat 2g | |
| Cholesterol 2mg | 10% |
| Sodium 660mg | 28% |
| Total Carbohydrate 31g | 10% |
| Dietary Fiber 3g | 0% |
| Sugars 5g | |
| Protein 5g | |
| Vitamin A 4% | Vitamin C 2% |
| Calcium 15% | Iron 4% |

*Percent Daily Values are based on a 2,000-calorie diet. Your daily values may be higher or lower depending on your calorie needs.

| | Calories: | 2,000 | 2,500 |
|--------------------|-----------|---------|---------|
| Total Fat | Less than | 65g | 80g |
| Sat Fat | Less than | 20g | 25g |
| Cholesterol | Less than | 300mg | 300mg |
| Sodium | Less than | 2,400mg | 2,400mg |
| Total Carbohydrate | | 300g | 375g |
| Fiber | | 25g | 30g |

Calories per gram:

Fat 9 • Carbohydrate 4 • Protein 4

The collage features several documents related to environmental reporting and product information. On the left, there's a Japanese environmental report for 'KAWASUMI KAKU' (Kawasaki Kaku) with various tables and charts. In the center, there's a Canon MEDIO GP405 product page with a green '製品環境宣言' (Product Environment Declaration) and a bar chart showing environmental performance. On the right, there's a green '製品環境宣言' (Product Environment Declaration) for the Canon MEDIO GP405, featuring a bar chart and a list of environmental goals. The bottom right corner shows a list of environmental goals and a bar chart.



Multi-Tier Label





LEED Overview*

Sustainable Sites

- Prerequisite 1 Erosion & Sedimentation Control
- Credit 1 Site Selection
- Credit 2 Development Density
- Credit 3 Brownfield Redevelopment
- Credit 4 Alternative Transportation
- Credit 5 Reduced Site Disturbance
- Credit 6 Stormwater Management
- Credit 7 Landscape & Exterior Design to Reduce Heat Islands
- Credit 8 Light Pollution Reduction

Water Efficiency

- Credit 1 Water Efficient Landscaping
- Credit 2 Innovative Wastewater Technologies
- Credit 3 Water Use Reduction

Energy & Atmosphere

- Prerequisite 1 Fundamental Building Systems Commissioning
- Prerequisite 2 Minimum Energy Performance
- Prerequisite 3 CFC Reduction in HVAC&R Equipment
- Credit 1 Optimize Energy Performance
- Credit 2 Renewable Energy
- Credit 3 Additional Commissioning
- Credit 4 Ozone Depletion
- Credit 5 Measurement & Verification
- Credit 6 Green Power

Materials & Resources

- Prerequisite 1 Storage & Collection of Recyclables
- Credit 1 Building Reuse
- Credit 2 Construction Waste Management
- Credit 3 Resource Reuse
- Credit 4 Recycled Content
- Credit 5 Local/Regional Materials
- Credit 6 Rapidly Renewable Materials
- Credit 7 Certified Wood

Indoor Environmental Quality

- Prerequisite 1 Minimum IAQ Performance
- Prerequisite 2 Environmental Tobacco Smoke (ETS) Control
- Credit 1 Carbon Dioxide (CO₂) Monitoring
- Credit 2 Ventilation Effectiveness
- Credit 3 Construction IAQ Management Plan
- Credit 4 Low-Emitting Materials
- Credit 5 Indoor Chemical & Pollutant Source Control
- Credit 6 Controllability of Systems
- Credit 7 Thermal Comfort
- Credit 8 Daylight & Views

Innovation & Design Process

- Credit 1 Innovation in Design
- Credit 2 LEED Accredited Professional

*Information based on LEED v.2.1 as revised 3/14/03.



LEED Overview*

- Includes both mandatory and desirable attributes.
- Regimented certification procedures.
- Projects can earn up to 69 total points.
- Projects rated according to following:
 - Certified (26 – 32 points)
 - Silver (33 – 38 points)
 - Gold (39 – 51 points)
 - Platinum (52 – 69 points)

*Information based on LEED v.2.1 as revised 3/14/03.



Hybrid Multi-Tier Label



Electronic Product Environmental Assessment Tool

www.epeat.net



EPEAT Components

- 1) Set of voluntary environmental performance criteria (IEEE 1680 American National Standard for the Environmental Assessment of Personal Computer Products)
- 2) System for identifying and verifying products which meet this criteria <www.epeat.net>



EPEAT Performance Categories

Environmentally Sensitive Materials

Materials Selection

Design for End of Life

Product Longevity/Life Cycle Extension

Energy Conservation

End of Life Management

Corporate Performance

Packaging



EPEAT Tiers



EPEAT Bronze— Meets the 23 mandatory criteria



EPEAT Silver— Meets 23 mandatory criteria and at least 50 percent of the optional criteria



EPEAT Gold— Meets 23 mandatory criteria and at least 75 percent of the optional criteria



Beware of “Improved” Criteria

| EXISTING LABEL |
|---|
| <p>MANDATORY ATTRIBUTES</p> <ol style="list-style-type: none"> 1. Mandatory attribute 1 2. Mandatory attribute 2 3. Mandatory attribute 3 4. Mandatory attribute 4 5. Mandatory attribute 5 6. Mandatory attribute 6 7. Mandatory attribute 7 8. Mandatory attribute 8 9. Mandatory attribute 9 10. Mandatory attribute 10 11. Mandatory attribute 11 12. Mandatory attribute 12 13. Mandatory attribute 13 14. Mandatory attribute 14 15. Mandatory attribute 15 |

•15 attributes

“IMPROVED” LABEL

MANDATORY

1. Mandatory attribute 1
2. Mandatory attribute 2
3. Mandatory attribute 3
4. Mandatory attribute 4
5. Mandatory attribute 5
6. Mandatory attribute 6
7. Mandatory attribute 7
8. Mandatory attribute 8
9. Mandatory attribute 9

POINT-SYSTEM

| | |
|----------------------------|----------------------------|
| 10. Mandatory attribute 10 | 21. Mandatory attribute 21 |
| 11. Mandatory attribute 11 | 22. Mandatory attribute 22 |
| 12. Mandatory attribute 12 | 23. Mandatory attribute 23 |
| 13. Mandatory attribute 13 | 24. Mandatory attribute 24 |
| 14. Mandatory attribute 14 | 25. Mandatory attribute 25 |
| 15. Mandatory attribute 15 | 26. Mandatory attribute 26 |
| 16. Mandatory attribute 16 | 27. Mandatory attribute 27 |
| 17. Mandatory attribute 17 | 28. Mandatory attribute 28 |
| 18. Mandatory attribute 18 | 29. Mandatory attribute 29 |
| 19. Mandatory attribute 19 | 30. Mandatory attribute 30 |
| 20. Mandatory attribute 20 | 31. Mandatory attribute 31 |

*** = 90+ points

** = 75+ points

* = 50+ points

•31 attributes

•Rating system (3 stars is best)



©Scot Case, TerraChoice Environmental Marketing, 2008



“IMPROVED” LABEL

MANDATORY

1. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
2. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
3. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
4. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
5. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
6. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
7. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
8. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~
9. ~~Xxxxxxxxxx~~ ~~xxxx~~ ~~xxxxxx~~ ~~xx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxxxxxxxxxxxxxx~~ ~~xxxxxxxx~~ ~~xxxx~~ ~~xxxxxxxx~~

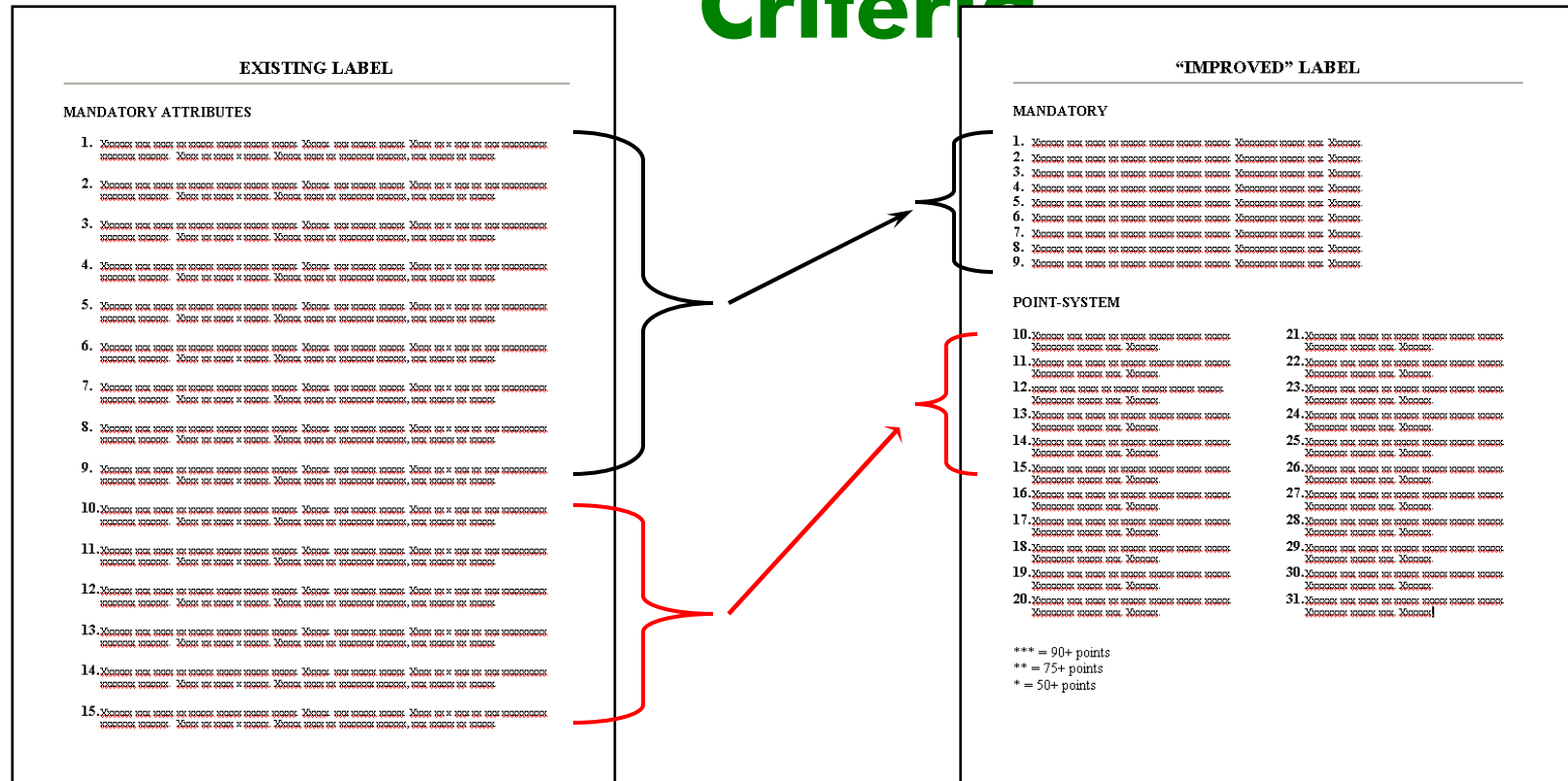
[illegible]

- [illegible]

*** = 90+ points
** = 75+ points
* = 50+ points

- 9 mandatory; 22 additional
- Rating system (3 stars is best)

Beware of “Improved” Criteria



•15 mandatory attributes

•9 mandatory; 22 additional

•Rating system (3 stars is best)



Beware of “Improved” Criteria

Some of the highest ranking products (three stars) under the “improved” system would not meet the minimum requirements of the “weaker” criteria.



Using Eco-Labels

Good News:

Labels make life easier.



Recommended Contract Language

"Products purchased under this contract must meet the _____ standard. The _____ standard is available at < _____ >."

- "Products purchased under this contract must meet the **Energy Star** standard. The **Energy Star** standard is available at <www.energystar.gov>."
- "Products purchased under this contract must meet the **EPEAT** standard. The **EPEAT** standard is available at <www.epeat.net>."



Recommended EPEAT Language

All desktops, laptops, and computer monitors provided under the contracts resulting from this RFP are required to have achieved a minimum EPEAT Bronze registration. Strong preference and additional points will be given for products that have achieved **EPEAT Silver** or **EPEAT Gold** registration and for products that have had their EPEAT claims **certified by an independent third-party**.



Recommended Contract Language

“Products purchased under this contract must be _____ certified or provide demonstrable proof of meeting the _____ standard and certification requirements. The _____ standard and certification requirements are available at < _____ >.”



Recommended Contract Language

“Products purchased under this contract must be EcoLogo certified or provide demonstrable proof of meeting the EcoLogo standard and certification requirements. The EcoLogo standard and certification requirements are available at <www.ecologo.org>.”



Recommended Contract Language

“Products purchased under this contract must be EcoLogo or Green Seal certified or provide demonstrable proof of meeting the EcoLogo or Green Seal standard and certification requirements. The EcoLogo or Green Seal standard and certification requirements are available at < www.ecologo.org and www.greenseal.org >.”





Popular Labels

- Chlorine Free Products Association – <www.chlorinefreeproducts.org>
- EcoLogo (Environmental Choice) – <www.ecologo.org>
- Energy Star – <www.energystar.gov/purchasing>
- EPEAT - <www.epeat.net>
- Forest Stewardship Council – <www.fsc.org>
- Green-e – <www.green-e.org>
- Green Guard – <www.greenguard.org>
- Green Seal – <www.greenseal.org>
- Green Building Council (LEED) – <www.usgbc.org/leed>
- Scientific Certification Systems – <www.scscertified.com>
- TCO – <www.tcodevelopment.com>



Eco-Labels

For additional information:

[<www.responsiblesourcing.net/resources/labels.pdf>](http://www.responsiblesourcing.net/resources/labels.pdf)



Labeling Resources

- <www.newdream.org/procure> -- “Getting Started” section includes lots of useful resources, including June 2004 *Government Procurement* article on eco-labels.
- <www.eco-labels.org> -- Maintained by Consumers Union, publishers of *Consumer Reports*. Includes an assessment of more than 90 (and growing) labels.
- <www.gen.gr.jp> -- Global Ecolabeling Network website, provides links to ecolabeling programs worldwide, most of which include English websites.



Labeling Resources

- <www.epa.gov/oppt/epp> -- EPA's Environmentally Preferable Purchasing Program. Includes list of questions for evaluating labeling and certifying claims.
- <www.epa.gov/oppt/epp/database.htm> -- EPA green purchasing database

Sustainable Purchasing Process

What am I Supposed to Do?



Sustainable Purchasing Process

- Review what others have done
 - EPPNet
 - NIGP
 - NASPO
 - Responsible Purchasing Network
- Check for appropriate eco-labels
 - EcoLogo
 - Green Seal
 - Other
- Select purchasing methodology
 - WSCA/U.S. Comm
 - IFB
 - RFP
 - ProCard

Opportunities

Where Can We Begin?

helping grow the world's
most sustainable companies



Opportunities

- Buildings
 - New construction
 - Renovation
 - Maintenance
- Cafeteria Supplies
- Cleaning Products
- Computers
- Copiers
- Electricity
- Furniture
- Landscaping/Pest Management
- Lodging
- Meetings
- Office Supplies
- Paint
- Paper
- Printing
- Vehicle Fleets

Cleaning Products

An Easy Place to Begin

helping grow the world's
most sustainable companies



Why Cleaning Products?

- One out of every three cleaning products contains ingredients that are known to be harmful to human health or the environment.
- 6 out of 100 janitors are injured on the job every year because of the chemicals they are using.
- The average injury costs more than \$1,000 in medical costs and lost productivity.



Recommended Contract Language

“Products purchased under this contract must be EcoLogo or Green Seal certified or provide demonstrable proof of meeting the EcoLogo or Green Seal standard and certification requirements. The EcoLogo or Green Seal standard and certification requirements are available at < www.ecologo.org and www.greenseal.org >.”



Paper

Where Can We Begin?



Why Paper?

- About 42% of the wood harvested for industrial use goes to making paper.
- In the U.S., the pulp and paper industry is the second largest consumer of energy and uses more water to produce a ton of product than any other industry.
- An average office worker uses about 10,000 sheets of copier paper per year!
- Office paper is the fastest growing use of paper. The cost of printing, copying, mailing, storing and disposing can exceed the initial price by a factor of ten.



Why Paper?

- Of the 4.7 million tons of copy paper used in the United States in 2000, less than 10% contained recycled fiber.
- U.S. copy paper use consumes 100 million mature trees every year.



Why Paper?

Each ton of 100% postconsumer paper saves:

- 24 trees
- 7,0000 gallons of water
- 4,100 kw hours of electricity
- 60 pounds of air pollution



Paper Attributes?

- Recycled-content
- Virgin-fiber sources
- No old-growth
- No endangered forests
- Process chlorine-free (PCF)
- Totally chlorine-free (TCF)
- Enhanced Elemental chlorine-free (ECF)
- No genetically modified trees (GMOs)
- No plantation conversion
- No polluting companies
- Tree-free papers
- FSC-certified papers



Common Vision for Paper



A Common Vision for Transforming the Paper Industry: Striving for Environmental and Social Sustainability

Drafted by the Center for a New American Dream, Conservatree, Co-op America, Dogwood Alliance, Environmental Defense, ForestEthics, the Green Press Initiative, the Markets Initiative, Natural Resources Defense Council, the Recycled Products Purchasing Cooperative

Ratified at The Environmental Paper Summit
Sonoma County, California. November 20, 2002

An Urgent Problem

Pulp and paper production, consumption and wasting have many negative environmental and social impacts. The pulp and paper industry is among the world's largest generators of air and water pollutants, waste products, and the gases that cause climate change. It is also one of the largest users of raw materials, including fresh water, energy, and forest fibers. Forests that are essential for clean air and water, wildlife habitat, climate protection, spirituality, recreation and indigenous peoples' cultural survival—including old-growth and other ecologically important forests—are being logged for fiber; in many places they also are being cleared for replacement by plantations that have reduced ecological value and employ

www.environmentalpaper.org



Buying Better Paper

Environmentally Preferable Papers

To buy the most environmentally preferable papers consider the following recommendations:

- ☐ Ensure the price per case at the quantity typically ordered is reasonable.
- ☐ Maximize the percent of postconsumer recycled content up to at least 80%.
- ☐ Verify the source of any remaining non-recycled fiber does not originate from old growth, endangered, or plantation forests.
- ☐ Reduce the use of chlorine and chlorine derivatives during the bleaching process.

Maximize Postconsumer Recycled Content

There is an important difference between recycled content and postconsumer recycled content. Recycled includes paper scraps recovered at the paper mill. Postconsumer is more preferable and means the recovered paper was collected from a home or office.

Most preferable

- ☐ At least 80% postconsumer
- ☐ 60% postconsumer
- ☐ 50% postconsumer
- ☐ 30% postconsumer
- ☐ 10% postconsumer
- ☐ 0% postconsumer (also known as "virgin" paper)

Least preferable

Improve Any Remaining Virgin Fiber Content

The non-recycled fiber used to make paper can originate from a variety of sources. Some sources are more preferable than others.

Most preferable

- ☐ Avoid fiber from old growth, endangered, and plantation forests
- ☐ Avoid fiber from old growth and endangered forests
- ☐ Avoid fiber from old growth forests
- ☐ Indiscriminate sourcing of virgin fiber

Least preferable

Reduce Use of Chlorine Derivatives

A variety of technologies can be used to bleach copy papers to any desired brightness level. Some bleaching technologies are more preferable than others.

Most preferable

- ☐ Process chlorine free (contains postconsumer fiber)
- ☐ Totally chlorine free (contains only virgin fiber)
- ☐ Enhanced elemental chlorine free
- ☐ Elemental chlorine free

Least preferable



Paper Standards



<www.ecologo.org>



<www.chlorinefreeproducts.org>



<www.greenseal.org>



<www.epa.gov/cpg>



<www.fscus.org>



Recommended Contract Language

“Products purchased under this contract must be EcoLogo, CFPA or Green Seal certified or provide demonstrable proof of meeting the EcoLogo, CFPA or Green Seal standard and certification requirements. The EcoLogo, CFPA or Green Seal standard and certification requirements are available at < www.ecologo.org, www.chlorinefreeproducts.org and www.greenseal.org >.”



Paper

For additional information:

<www.responsiblesourcing.net/resources/paper.pdf>

Lubricants

Where Can We Begin?



helping grow the world's
most sustainable companies



Lubricants

King County Environmental Purchasing Program Environmentally Preferable Lubricants

- Introduction
- Usage History and Experience
- Bid and Contract Specifications
- Re-refined Motor Oil
- Vegetable-Based Lubricants
- Oil Change Service Contract
- For More Information
- Vendor Information

www.metrokc.gov/procure/green



Lubricants

Re-refined Motor Oil

- 15W-40 Motor Oil
- 10W30 Motor Oil
- SAE 40W Motor Oil
- Hydraulic Oil AW ISO 32
- Hydraulic Oil AW ISO 46
- Hydraulic Oil AW ISO 150
- Multipurpose Automotive Gear Lubricant, API GL-5
- Multipurpose Automotive Gear Lubricant, API GL-5
- Multipurpose Lithium Complex Grease
- Premium Multipurpose Lithium Complex Grease



Lubricants

Vegetable-Based Lubricants

- Hydraulic Tractor Fluid
- Biodegradable Bar, Chain and Sprocket Oil
- Biodegradable Two-Cycle Engine Oil
- Oil Change Service Contract



Lubricants

Specifications

Hydraulic Tractor Fluid

Description:

Hydraulic Tractor Fluid or approved equal is a readily biodegradable and non-hazardous ISO 40 grade hydraulic tractor oil for use in general purpose hydraulic systems. This oil must be a direct replacement for petroleum oil based hydraulic tractor fluids. Oil must meet or exceed the requirements of petroleum oil based hydraulic fluids and have excellent anti-wear characteristics.

General:

Must be readily biodegradable and non-toxic ISO 40(J-20-C) grade tractor oil for use in heavy-duty brake, transmission and hydraulic systems.

Must be based on natural ester technology and a direct replacement for petroleum oil based tractor fluids.

Must exceed the requirements of petroleum oil based tractor fluids and have excellent anti-wear characteristics.

Must meet John Deere, Caterpillar, Vickers, Denison and Military specifications

Physical Properties:

| 1. | Flash Point | ASTM D-92 | 220°C |
|----|----------------------------------|-------------|--------|
| 2. | Specific Gravity, 60°F | ASTM D-1298 | 0.90 |
| 3. | Viscosity @ 40°C, cSt | ASTM D-445 | 46 |
| 4. | Viscosity @ 100°C, cSt | ASTM D-445 | 10.1 |
| 5. | Viscosity Index | ASTM D-2270 | >200 |
| 6. | Pour Point | ASTM D-97 | -36°C |
| 7. | Brookfield Viscosity @ -35°C, cP | ASTM D-2983 | 11,500 |

Saving More than Energy

Energy Efficiency and More

helping grow the world's
most sustainable companies



Vampire Power

Agencies are paying for electricity that they don't even know they are using.

Every dollar agencies spend on electricity is one less dollar they can spend meeting their primary objective.



Vampire Power

Even though home electronics are not typically the biggest electricity users in a house, vampire power can cost up to 10% of monthly electric bills.

Approximately 26 power plants are needed just to power these energy vampires.

Estimates of the cost to consumers and businesses for all the electricity lost to vampire power in the US range from \$1 billion to \$3.5 billion annually.



Vampire Power

| Type of equipment | Amount of vampire power wasted * |
|----------------------|----------------------------------|
| Cordless phone | 66% |
| Televisions | 25% |
| VCRs | 30% |
| DVD players | Up to 75% |
| Home audio equipment | Up to 90% |

* Data from EnergyStar.gov



EcoLogo Certified

Photocopiers

Canon (69 products)

Hewlett Packard (29 products)

Konica Minolta (9 products)

Kyocera Mita (29 products)

- Ricoh (90 products)
- Sharp Electronics (99 products)
- Xerox (157 products)

Fax Machines

Canon (15 products)

Kyocera Mita (2 products)

Ricoh (14 products)

- Sharp (9 products)
- Xerox (74 products)

Laser Jet Desktop Printers

Canon (13 products)

Hewlett Packard (156 products)

Kyocera Mita (21 products)

Lexmark (97 products)

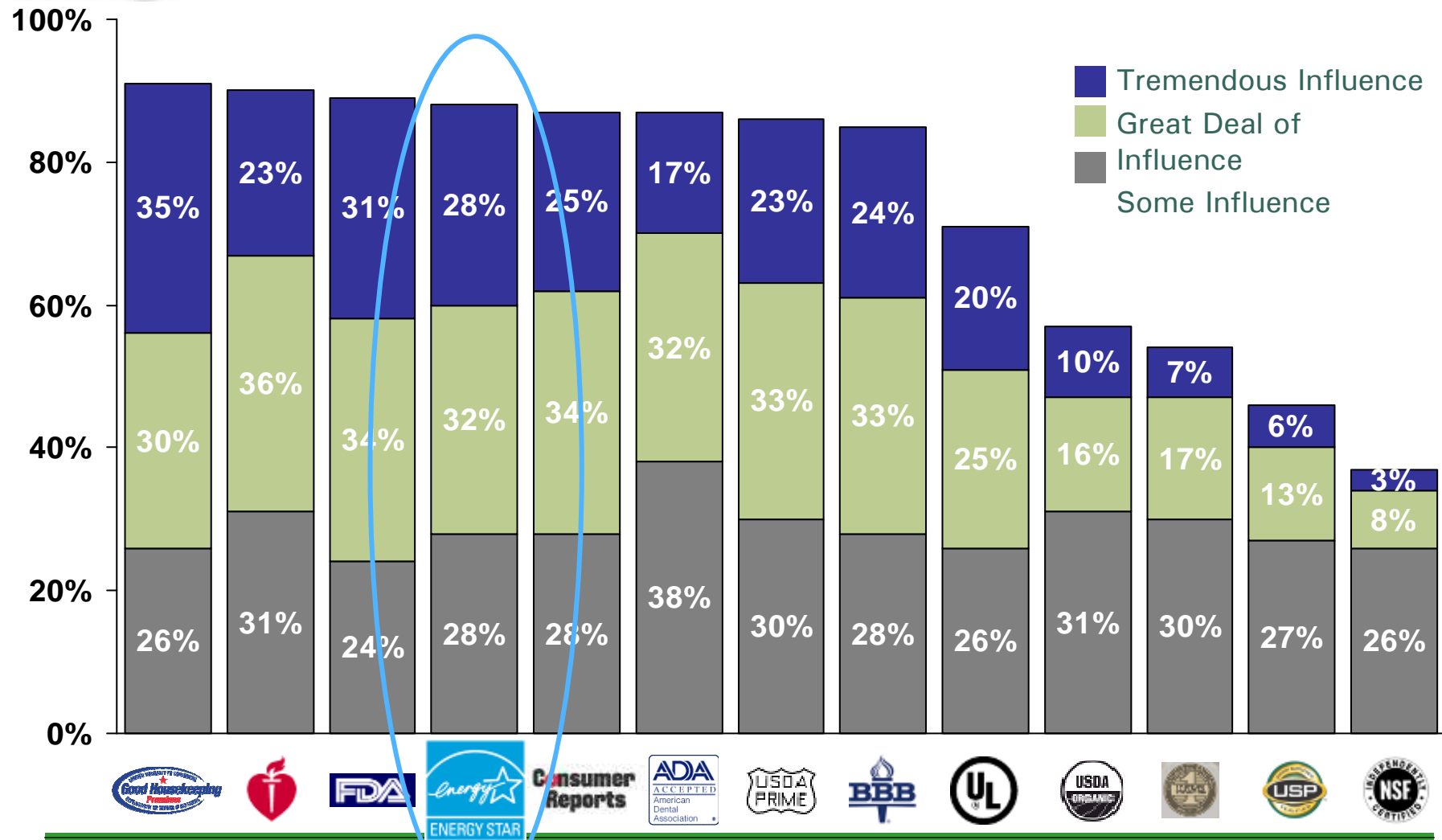
- Ricoh (36 products)
- Sharp (6 products)
- Xerox (74 products)





EcoLogo[™]

Energy Star



Source: Fairfield Research, May 2003

©Scot Case, TerraChoice Environmental Marketing, 2008



Energy Star Savings

| | 10 Million Televisions | 7.5 Million DVD Players | 5 Million Computer | Total Savings |
|--|---------------------------|----------------------------|-----------------------|---------------|
| Life cycle savings | \$227,061,911 | \$100,792,024 | \$24,095,583 | \$351,949,518 |
| Life cycle energy saved (kWh) | 3,871,044,000 | 1,655,640,000 | 373,977,082 | 5,900,661,082 |
| Life cycle air pollution reduction (lbs of CO ₂) | 5,535,592,920 | 2,367,565,200 | 534,787,227 | 8,437,945,347 |
| Air pollution reduction equivalence (annual number of cars removed from the road) | 478,858 | 204,807 | 46,262 | 729,926 |
| Air pollution reduction equivalence (acres of forest) | 754,888 | 322,864 | 72,929 | 1,150,681 |



RoHS Overview

RoHS is the European Restriction on Hazardous Substances directive, which took effect July 1, 2006.

It sets significant limits on six common hazardous substances for products manufactured in or imported to Europe.

California and other U.S. states are adopting similar regulations.



Human Health and Environmental Risks

Cadmium, used in batteries, surface mount device (SMD) chip resistors, infrared detectors, semiconductors, and older cathode ray tubes (CRTs), can cause brittle bones, lung damage, and kidney disease. Approximately 2 million pounds of cadmium are present in the 315 million computers that became obsolete between 1997 and 2004.

Lead is most commonly used in solder and the glass of CRTs. Lead is a cumulative toxin that can cause damage to the nervous system, reproductive system, and kidneys.

Mercury is used in LCD and flat panel displays, switches, printed wiring boards, and batteries. Exposure to high levels of mercury can cause chronic brain and kidney damage.



Human Health and Environmental Risks

Polyvinyl Chloride (PVC), used in computer cabling and housings, is found among the 13.8 pounds of plastic present in the average computer. PVC is not only difficult to recycle, but releases dioxins and furans during its production and incineration. Dioxin is known to cause cancer and can also cause skin problems, reproductive disorders, and developmental effects.

Brominated Flame Retardants are used in computer plastics, circuit boards, cables, and connectors to reduce the risk of fire. Studies have shown that brominated flame retardants such as polybrominated biphenyls (PBBs) and polybrominated diphenylethers (PBDEs) may be endocrine disruptors that interfere with human hormone functions.



Human Health and Environmental Risks

Hexavalent Chromium is used to protect untreated and galvanized steel from corrosion and to harden steel housings. Even in small concentrations, hexavalent chromium can cause strong allergic reactions and may even cause DNA damage. The 315 million computers that became obsolete between 1997 and 2004 contained approximately 1.2 million pounds of hexavalent chromium.

Copiers

Where Can We Begin?



Copier Impacts

- Approximately 7 million copiers in use in U.S.
- Number one consumer of paper
- Typically one of largest plug loads in an office
- Duplex mode reduces paper use 10 to 40%
- Energy Star can reduce energy consumption 40 to 60%



Copier Impacts

- If all copiers used in the United States automatically defaulted to duplex, paper use could be reduced by more than 200 billion sheets.
- This would save 1 million tons of paper, enough to go around the world 1,400 times and save an estimated 20 million trees.



Massachusetts

Massachusetts requires:

- Must be EnergyStar compliant
- Default set to duplex mode for all copy jobs
- Take-back and recycling programs
- Warranties for the use of recycled paper
- Recycled-content packing materials
- Environmental fact sheets for each copier



Consider Alternatives

- Some organizations are buying copy services rather than buying copiers.
- NASA is expecting to save approximately \$4.5 million during the 5-year span of the contract.



EPA Recommendations

- Comply with the EPA ENERGY STAR® Program—Tier II (standard size) or Tier III (large format).
- Are programmable or clearly marked with duplexing options that can be set as default.
- Use returnable or recyclable and remanufactured toner cartridges.
- Use an organic photoreceptor (if not organic, it must not contain arsenic, cadmium, or selenium).



EPA Recommendations (cont.)

- Do not use wet process technology.
- Do not emit ozone at a concentration in excess of 0.02 mg/m³.
- Do not emit dust at a concentration in excess of 0.25 mg/m³.
- Do not emit styrene at a concentration in excess of 0.11 mg/m³.



EPA Recommendations (cont.)

- Contain no polybrominated biphenyls (PBBs) or diphenyl ethers (PBDEs).
- Use toner that is free of carcinogenic, mutagenic, and teratogenic substances.
- Are refurbished/reconditioned/remanufactured.
- Make use of remanufactured parts.
- Contain materials made with recycled content.



EPA Recommendations (cont.)

- Use minimal packaging and/or arrange for packaging taken back for reuse.
- Can be taken back by the vendor at the end of its useful life for reconditioning or recycling of parts.



Recommended Contract Language

“Products purchased under this contract must be EcoLogo certified or provide demonstrable proof of meeting the EcoLogo standard and certification requirements. The EcoLogo standard and certification requirements are available at < www.ecologo.org >.”

Batteries

Where Can We Begin?



Batteries

- Review what others have done
- Check for appropriate eco-labels
- Look for any new research data
- Select purchasing methodology
- Write bid specifications
- Evaluate bids



Batteries

- Battery-free?
- Rechargeable?
- Mercury free?
- Cadmium free?
- Environmentally preferable gel batteries?
- Recyclable?



Batteries

Environmentally Preferable Purchasing - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media

Address http://yosemite1.epa.gov/oppt/epp/stand2.nsf

U.S. Environmental Protection Agency

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Database of Environmental Information for Products and Services



SEARCH NOW - to suggest additions to the database please [contact us](#). **Note to Federal Purchasers:** the database contains information on mandatory purchase programs contained in FAR Part 23 (EnergyStar, CPG and the soon to be released Bio-Based products). Products meeting the mandatory purchase program requirements may be accessed by clicking the first bullet under the "All product brand lists" under each category aisle.

For assistance with implementing recycling and other waste management programs within your organization, please go to [EPA's WasteWise site](#).

Welcome to the Environmentally Preferable Purchasing (EPP) Database—a tool to make it easier to purchase products and services with reduced environmental impacts. Environmental information on over 600 products and services is included in this database.

This database will help you buy greener products and services by linking you to:

- Contract language, specifications, and policies created and used by federal and state governments and others to buy environmentally preferable products and services.
- Environmental standards and guidelines for the product you want to buy.
- Vendor lists of product brands which meet these standards.

www.epa.gov/oppt/epp/database.htm



Batteries

Environmentally Preferable Purchasing - Microsoft Internet Explorer

Address: <http://yosemite1.epa.gov/oppt/epp/stand2.nsf/Pages/DisplayProduct.html?Open&batteries&Type=2>

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Database of Environmental Information for Products and Services

Results of Product Search for batteries

Product Voluntary Standards or Guidelines

| Product | Program (&Contact) | View Vendor List Vendor List EXIT disclaimer | View Standard/Criteria Standard EXIT disclaimer | Attributes | | | Methodology Methodology EXIT disclaimer | Date Finalized |
|--------------------------|---|--|---|--|----------------------------|----------------------------------|---|----------------|
| | | | | Prohibited Substances | Limited Substances | Other Attributes | | |
| Batteries (primary) | Nordic Countries - Nordic Swan info@ecolabel.no | Vendor List EXIT disclaimer | Standard EXIT disclaimer | None Stated | Mercury Cadmium Lead | Health impacts | Methodology EXIT disclaimer | 03/15/96 |
| Batteries (rechargeable) | Canada - Environmental Choice kgallagher@terrachoice.ca | Vendor List EXIT disclaimer | Standard EXIT disclaimer | Electrolyte sealing compound or other internal components on external product surfaces; Mercury Cadmium | None Stated | Safety and performance standards | Methodology EXIT disclaimer | 01/05/96 |
| Batteries | Nordic Countries - Nordic | Vendor List EXIT disclaimer | Standard EXIT disclaimer | None Stated | Arsenic Cadmium | Health | Methodology EXIT disclaimer | 03/15/96 |

www.epa.gov/oppt/epp/database.htm

Batteries



- Nordic Swan Eco-Label
- 17 pages
- Specific requirements



Batteries

- Identifies acceptable heavy metal limits

| Metal | Content |
|---------|----------------|
| Mercury | ≤ 0.1 ppm |
| Cadmium | ≤ 1.0 ppm |
| Lead | ≤ 10 ppm |

- Identifies acceptable test methodology
- Also addresses packaging and recycling



Batteries

EcoLogo Certification Criteria

- The rated capacity of the rechargeable consumer battery, by model, must be equal to or greater than the following minimum values: AAA: 300 mAh; AA: 750 mAh; C: 1800 mAh; D: 3000 mAh; N: 270 mAh; and 9V: 180 mAh.
- The cycle life capacity of the battery, by model, must be equal to or greater than the following minimum values: AAA: 7 Ah; AA: 16.5 Ah; C: 48 Ah; D: 70 Ah; N: 5 Ah; and 9V: 3 Ah.
- No electrolyte, sealing compound, or other internal component may appear on any external surfaces of the battery during or following any of the tests specified in the above requirements.
- The battery must be labeled as required in the International Electrotechnical Commission Standard applicable to the model, when available or with at least the following information: safety-related prohibitions: use-related instructions to prevent hazards, promote maximum battery life, and utility.
- The batteries must be manufactured so that none of the effluents or wastes discharged to the environment in the manufacturing process are acutely lethal.
- The batteries must not be manufactured or formulated with mercury, cadmium, or their compounds, except where such substances are present as naturally occurring trace contaminants associated with other components.



Paint

Where Can We Begin?



Paint—APG, Maryland

- Painting related activities covered by CAA, RCRA, and CERCLA.
- Paint represented about 5 percent of Aberdeen's 50,000 reportable hazardous materials under EPCRA.
- Located in an ozone non-attainment zone.
- Used to use or store 2,200 different paints and coatings (excluding color differences).
- 565 were architectural or anticorrosive paints.



Maximum VOC Levels

| Type of Paint | VOCs (grams/liter) | VOCs (pounds/gallon) |
|------------------------|-----------------------|-------------------------|
| Interior Architectural | | |
| Flat | 50 | 0.42 |
| Nonflat | 100 | 1.25 |
| Exterior Architectural | | |
| Flat | 100 | 0.83 |
| Nonflat | 200 | 1.66 |
| Anticorrosive | | |
| Flat | 250 | 2.10 |
| Semigloss | 250 | 2.10 |
| Gloss | 250 | 2.10 |



Prohibited Materials

Inorganic Materials:

Antimony
Cadmium
Hexavalent chromium

Lead
Mercury

Organic Compounds:

1,1,1-trichloroethane
1,2-dichlorobenzene
Acrolein
Acrylonitrile
Benzene
Butyl benzyl phthalate
Di (2-ethylhexyl) phthalate
Di-n-butyl phthalate
Di-n-octyl phthalate
Diethyl phthalate

Dimethyl phthalate
Ethylbenzene
Formaldehyde
Isophorone
Methyl ethyl ketone
Methyl isobutyl ketone
Methylene chloride
Naphthalene
Toluene (methylbenzene)
Vinyl chloride



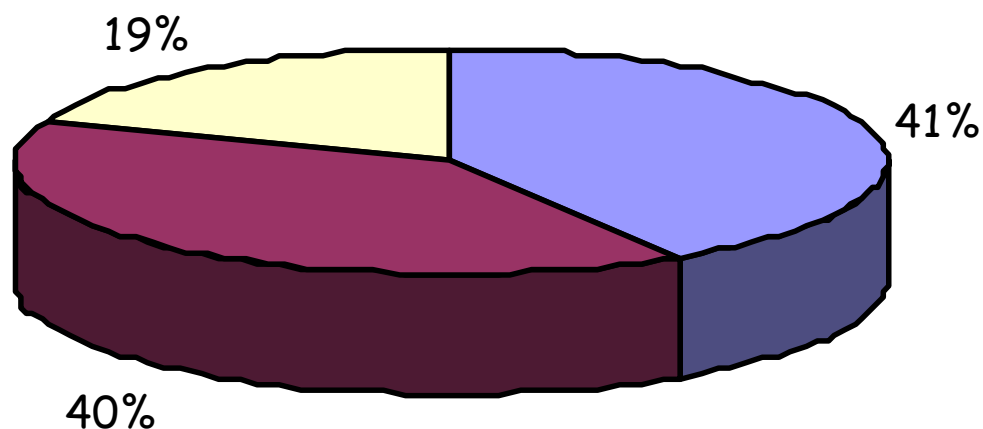
Test Results

| Element | Quantity | Percentage of Paints Evaluated |
|--|----------|--------------------------------|
| Paints Evaluated | 565 | -- |
| Paints eliminated due to unacceptable ingredients or reported VOC levels | 351 | 62.1 |
| Paints no longer manufactured | 96 | 17.0 |
| Paints unavailable for testing | 11 | 1.9 |
| Paints tested for VOC levels | 107 | 18.9 |
| Paints meeting APG's standard | 71* | 12.6 |
| *Two anticorrosive paints added later. | | |



MSDS Errors

Actual Versus Reported VOC Levels (Within 10 Percent of Reported Levels)

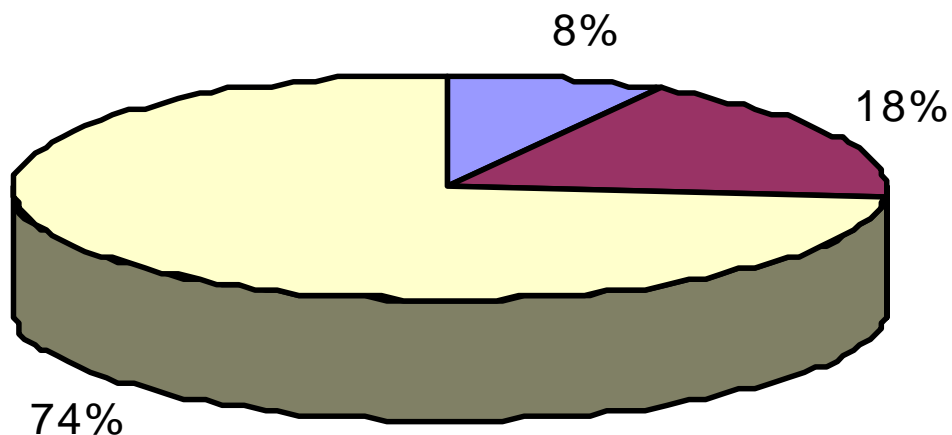


■ Below Reported Levels ■ Above Reported Levels ■ Within Reported Levels



MSDS Errors

Actual Versus Reported VOC Levels (Within 50 Percent of Reported Levels)



■ Below Reported Levels ■ Above Reported Levels ■ Within Reported Levels



APG Results

- Paints meeting the standard are on average \$1.76 less expensive per gallon.
- Saves \$25,000 annually in avoided disposal costs.
- Re-Nu-It facility reduces paint purchases by \$10,000 annually.
- Total savings: \$60,000 a year.



Paint—Cincinnati, Ohio

- Switched traffic line paint to aqueous-based paints.
- Eliminates lead, cadmium, other heavy metals, and reduces VOCs.
- No longer has to be treated as a hazardous waste.
- Avoids need for harmful cleaning solvents.
- Removes 33,000 pounds of lead and 36,000 pounds of VOCs from environment.



Paint—U.S. Air Force

- 75 percent of hazardous waste is related to aircraft painting, stripping, and repainting operations
- Reformulated paint for C-17 saves \$1.6 million annually per aircraft.



Paint Resources



EPA's *Painting the Town Green*
(EPA742-R-99-005) November
1999

www.epa.gov/oppt/epp/pdfs/paint.pdf

EcoLogo

www.ecologo.org

Green Seal

www.greenseal.org



Recommended Contract Language

“Products purchased under this contract must be EcoLogo or Green Seal certified or provide demonstrable proof of meeting the EcoLogo or Green Seal standard and certification requirements. The EcoLogo or Green Seal standard and certification requirements are available at < www.ecologo.org and www.greenseal.org >.”



Electricity

Where Can We Begin?



Electricity Impacts

- Electricity use accounts for 36 percent of U.S. greenhouse gas emissions.
- Nonrenewable power plants are responsible for:
 - 67% of all sulfur dioxide emissions, the leading component of acid rain;
 - 40% of all human-made carbon dioxide emissions, the leading greenhouse gas believed to contribute to global climate change;
 - 25% of all nitrogen oxides emissions, a key component of smog and acid rain;
 - 34% of mercury emissions, a toxic heavy metal that accumulates in the food chain.



EPA Green Power Purchase

A.10 RENEWABLE POWER

The EPA would like to take advantage of the opportunity to reduce the environmental impact of their electricity consumption at the EPA Richmond, CA laboratory by choosing an electricity supplier that provides 100 percent renewable power. For the purposes of this contract, renewable power is defined as biomass, solar thermal, photovoltaic, wind, geothermal, small hydropower of 30 megawatts or less, digester gas and landfill gas. This is the definition for “renewable electricity generation technology” contained in California Public Utilities Code 383.5, but excludes waste tire and municipal solid waste generation technologies. In the case of a tie, priority will be given to renewable power from “New” renewable generation facilities. “New” facilities are those which became operational on or after September 23, 1996, per California law.



EPA Green Power Purchase

A.11 GREEN-e REQUIREMENTS

Green-e certification, including strict adherence to the Green Power Board's Code of Conduct (see Exhibit 1) is the minimum standard for this contract. This is the most efficient way for the EPA to ensure that the Contractor is adequately fulfilling its obligation to provide green power, as specified in this contract. The Contractor's product must be Green-e certified within 45 days of contract award. Failure to obtain the Green-e certification, failure to deliver 100 percent renewable energy, as measured by the one year settlement period described in Section A.4, or the loss of the Contractor's Green-e certification shall be grounds for Termination for Cause. The Contractor's liability to the EPA under a Termination for Cause shall be the cost of reprocurement, as well as any incidental or consequential damages incurred as a result of the termination.



EPA Green Power Purchase

A.11 GREEN-e REQUIREMENTS (cont.)

Green-e requirements can and do change from year to year. Contractors will be expected to meet all new Green-e requirements, including the requirement that a percentage for renewable generation come from "new" sources (see Exhibit 2).

If the Green-e brand name ceases to exist, the Contractor shall be responsible for submitting to the Contracting Officer or his Authorized Representative a report that includes all the information specified in the Green-e Code of Conduct, Section VI Product Substantiation. The report shall be accompanied by a signed affidavit attesting to the accuracy of the report. If the Contractor knowingly renders erroneous information, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract for cause.



Recommended Contract Language

“Products purchased under this contract must be EcoLogo or Green-e certified or provide demonstrable proof of meeting the EcoLogo or Green-e standard and certification requirements. The EcoLogo or Green-e standard and certification requirements are available at < www.ecologo.org and www.green-e.org >.”



So Now What?!?

Have We Solved All of the Issues?

scot case
scase@terrachoice.com
www.terrachoice.com
610 779-3770

helping grow the world's
most sustainable companies



Millennium Ecosystem Assessment

“At the heart of this assessment is a stark warning. Human activity is putting such a strain on the natural functions of Earth that the ability of the planet’s ecosystems to sustain future generations can no longer be taken for granted.”



Five Winds International

“For years western industrialized economies could sustain high levels of consumption because the rest of the world lives in abject poverty, resources were plentiful, and the environment could hand the waste generated, but today things are different.”



Five Winds International

We've made some progress "...but with 3 to 5 billion more people expected on the planet over the next 50 years, these improvements will be overtaken by the sheer scale of our consumption and the profound impact it will have on the planet."



Inspiration

"Why should I care about future generations?
What have they ever done for me?"

— *Groucho Marx*





Observations and Opportunities

Government purchasers are influencing manufacturers, environmental standard setters and retailers.

- You can use this leverage to:
 - Continue asking for better products and services.
 - Push for certification (or other proof) that products actually meet an environmental standard.
 - Encourage suppliers to provide more accurate, transparent, and useful environmental information.